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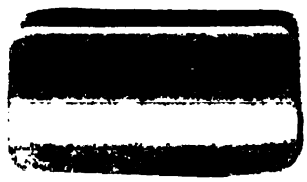

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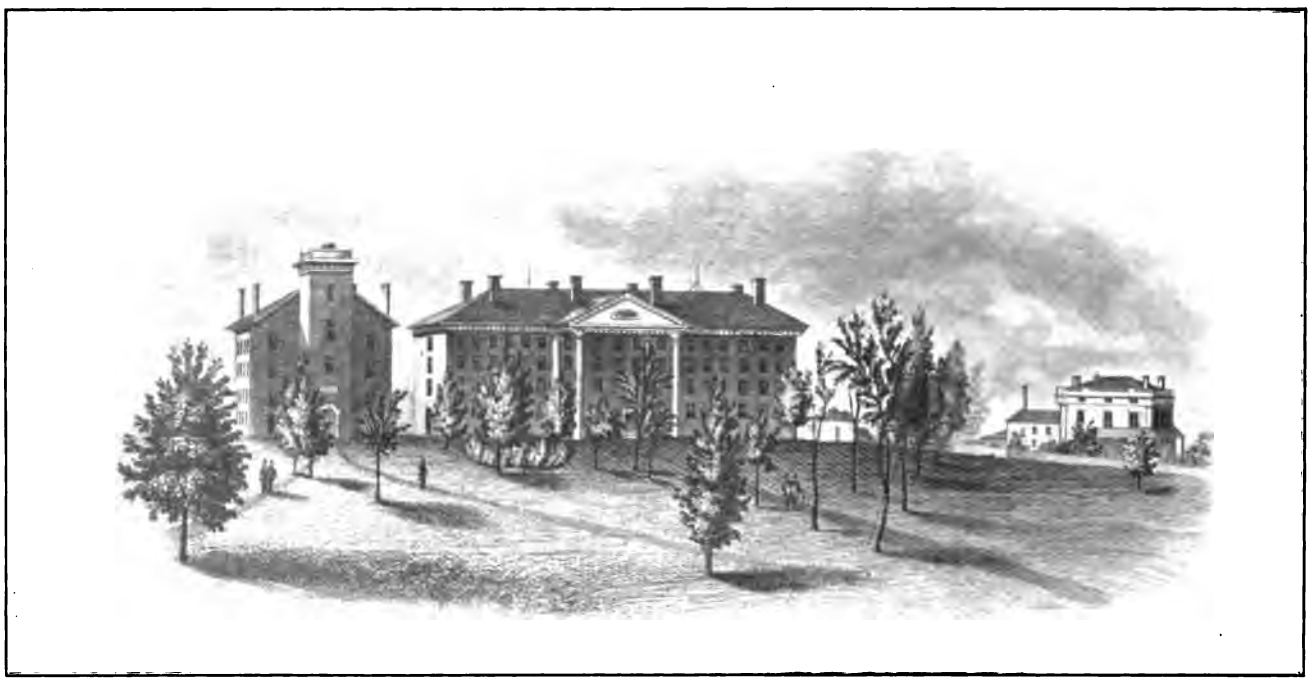

WESLEYAN UNIVERSITY

ABOUT 1853

1831-1906

CELEBRATION

OF THE

SEVENTY-FIFTH ANNIVERSARY

OF THE FOUNDING OF

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LABAN CLARK

INTRODUCTION

Preliminary

THE first definite action looking to a celebration of the Seventy-fifth Anniversary of the founding of Wesleyan University was taken by the Faculty on November 16, 1904, when a committee was appointed to consider the advisability of holding such a celebration at the Commencement of 1906. On January 11, 1905, the Faculty approved the recommendation of this committee that no elaborate ceremonies be held, but that the regular exercises of Commencement week be modified so as to include features commemorative of the occasion. Another committee, including some of the members of the former committee, was appointed to make a preliminary report to the Faculty in time for action before the mid-year meeting of the Board of Trustees.

The report of this second committee, approved by the Faculty on March 27, 1905, requested the Board of Trustees to authorize the appointment of a joint committee of nine, to consist of three Trustees, three members of the Faculty, and three alumni, with power to make arrangements for the proper celebration of the seventy-fifth anniversary of the founding of the University.

Finally, at a meeting of the Board of Trustees, held March 30, 1905, the appointment of such a joint committee was authorized and the Trustee members were appointed. The joint committee, as finally appointed, consisted of the following persons:

BRADFORD P. RAYMOND,
CHARLES L. ROCKWELL,
EDMUND M. MILLS, } *for the Trustees.*

MORRIS B. CRAWFORD,
HERBERT W. CONN,
WILLIAM J. JAMES, } *for the Faculty.*

JOHN C. CLARK,
WATERS B. DAY,
WALTER B. WILSON, } *for the Alumni.*

At the first meeting of this joint committee, held in Middletown, May 17, 1905, in addition to a consideration of the programme, plans for raising money from the alumni were discussed at considerable length. The work of carrying out these plans for raising money was later turned over to a special committee of five, appointed by the Alumni Association at its annual meeting on June 27, 1905. Professor H. W. Conn, a member of the joint committee, whose appointment for the purpose of raising money from the alumni had been recommended by the joint committee, was secured by this special committee of five and is now engaged in raising an Alumni Fund of $200,000.

The programme of the celebration, as finally adopted, is contained in the Programme of Commencement Week, given below. As it was intended to be almost exclusively an alumni celebration, few special invitations were sent out. The list of the alumni of the University present in Middletown during the celebration will be found in Appendix I.

Programme of Commencement Week, 1906

THURSDAY, JUNE 21.

8:00 P. M. Prize Declamation Contest.

FRIDAY, JUNE 22.

8:00 P. M. Rich Prize Contest.

SATURDAY, JUNE 23.

3:00 P. M. Baseball Game: Alumni vs. 'Varsity.
5:00 P. M. Preliminary Meeting of Phi Beta Kappa.
8:00 P. M. Glee Club Concert.

SUNDAY, JUNE 24.

10:30 A. M. Baccalaureate Sermon, by President Bradford Paul Raymond, D.D., LL.D.
7:30 P. M. Address, "The History and Work of Wesleyan University," by Professor William North Rice, Ph.D., LL.D.

MONDAY, JUNE 25.

9:00 A. M. Annual Meeting of Phi Beta Kappa.
11:00 A. M. Final Chapel Exercises. Address by Professor Benjamin Gill, D.D. Announcement of award of prizes and preliminary honors.
2:00 P. M. Class Day.
4:00 to 7:00 P. M. President's Reception.
6:00 to 9:00 P. M. Class Reunions.
7:30 P. M. Meeting of the Board of Trustees.
9:00 to 11:00 P. M. Illumination of the Campus: Open air concert; Singing by Undergraduates and Alumni.

TUESDAY, JUNE 26.

9:00 A. M. Meeting of the Board of Trustees.
9:30 A. M. Meeting of the Alumnae.

10:00 A. M. Business Meeting of the Alumni Association.

12:30 P. M. Luncheon for Alumni and Guests of the University. Toast-Master, Professor Caleb Thomas Winchester, L.H.D.

3:30 P. M. Championship Baseball Game: Williams vs. Wesleyan.

5:00 to 7:00 P. M. Receptions by the College Fraternities.

8:15 P. M. Phi Beta Kappa Oration, "Transportation and Combination," by Martin Augustine Knapp, LL.D., Chairman of the United States Interstate Commerce Commission.

WEDNESDAY, JUNE 27.

10:30 A. M. Addresses by Stephen Henry Olin, LL.D., and Rev. Herbert Welch, D.D., LL.D., President of Ohio Wesleyan Uinversity.

Conferring of Degrees.

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MIDDLETOWN

1852

The Celebration

THE call of Alma Mater to celebrate the seventy-fifth anniversary of the founding of Wesleyan University drew five hundred alumni and many other friends of the institution to Middletown for the exercises of Commencement week, 1906. As in 1903, the task of the Committee on Entertainment was materially lightened by the hospitality of the citizens of Middletown, who opened their houses for the accommodation of visitors. Following the custom of recent years, visitors arrived early, and the annual Glee Club Concert on the evening of Saturday, June 23, was attended by an audience which crowded the Middlesex Opera House. One of the attractive features of the concert was the appearance in nearly full numbers of the '88 Glee Club.

The Baccalaureate sermon by President Raymond was the first of the exercises of Commencement week. It was delivered in the Methodist Church. At 10.30 A. M. the Faculty and graduating class, in academic costume, entered the church in procession. The music was furnished by the Glee Club, with Professor Karl P. Harrington at the organ. The sermon, with all the addresses of the week, is printed at length in the second section of this volume.

In the evening the Methodist Church was again filled with an attentive audience. Professor William North Rice delivered an elaborate and inspiring address on "The History and Work of Wesleyan University."

The closing chapel exercises of the college year brought together in Memorial Chapel on Monday morning a large audience of undergraduates and their friends, as well as of alumni. At the close of the customary exercises Rev. Benjamin Gill, D.D., of the Class of 1870, was introduced. After a felicitous speech, abounding in reminiscences of college days and full of humor, he announced the results of the prize contests of the year.

Following the Class Day exercises on Monday afternoon came one of the innovations of the programme. The President's reception was held in the late afternoon in his new home and in

the spacious grounds surrounding it. The change in time from Wednesday evening contributed greatly to making it a popular success.

The second innovation was the holding of class reunions on Monday from 6 to 9 P. M. Of the forty-five classes graduated from 1861 to 1905, thirty-four held reunions, twelve being accommodated in the John Bell Scott Memorial and served by the same caterer. It is safe to say that never have so many classes held successful reunions. A general demand for the continuation of the arrangement was expressed by the alumni.

At 9 P. M. began the Campus Rally, the most popular exercise of the Commencement season. The playing of Reeves' American Band of Providence, R. I., called the alumni from their reunions and drew hundreds of citizens and visitors to the Campus. The illumination was even more successful than that of 1903. By the coöperation of the Fraternities the scheme of illumination was extended to their houses adjacent to the Campus and the beauty of the scene thereby greatly enhanced. The alumni gathered about a stand on which the band was seated and, under the efficient leadership of W. B. Davis, '94, sang with enthusiasm Wesleyan songs, old and new. To the older alumni who did not know them the later songs speedily commended themselves and they sought for copies of the songs in order that they might unite in the praise of Alma Mater.

The gathering of so many alumni for class reunions on Monday evening ensured a large and enthusiastic meeting of the Alumni Association on Tuesday morning, at which action was taken looking to the raising of an Alumni Fund of $200,000. After the adjournment of this meeting the alumni and guests of the University gathered in the beautifully decorated Fayerweather Gymnasium for the Commencement luncheon. So large was the attendance that a number had to be seated in the gallery. The caterer was Besse of Hartford, and the music was furnished by Reeves' American Band, which played at all the exercises of the week. The toast-master of the occasion was Professor Caleb Thomas Winchester, '69, and the list of toasts and speakers was as follows:

THE OLD FACULTY,	Rev. Bishop Cyrus D. Foss, D.D., LL.D., '54

TOWN AND GOWN,	Hon. Arthur E. Sutherland, LL.D., '85
WESLEYAN IN THE CHURCH,	Rev. Daniel Dorchester, Jr., D.D., '74
THE TEACHING PROFESSION,	Prof. Charles H. Judd, Ph.D., '94
THE LIBERTY OF PROPHESYING,	Prof. Charles M. Stuart, D.D.

Tuesday evening Hon. Martin Augustine Knapp, LL.D., '68, Chairman of the Interstate Commerce Commission, delivered a masterly address on Transportation and Combination, showing that the modern tendency to great industrial combinations was the inevitable result of the changes in methods of transportation, and that the dangers inherent in such combinations can be averted only by efficient governmental regulation. The address was given in the Middlesex Opera House before the Connecticut Gamma of Phi Beta Kappa.

The exercises of Wednesday, Commencement Day, were held in the Middlesex Opera House. The speeches by members of the graduating class in competition for the Rich Prize, which are usually given on Commencement Day, had been given on Friday evening of the previous week, and their place was taken by addresses delivered by two distinguished alumni. At 9:30 in the morning, in accordance with the notice of the Marshal, the Trustees, Faculty (present and former members), members of the Faculties of other institutions, specially invited guests, candidates for honorary degrees, the men of the graduating class, and the alumni assembled in the basement of Willbur Fisk Hall. At a little past ten the procession, headed by the band, moved down College Street to the Middlesex in the following order:

GRADUATING CLASS.
ALUMNI.
FACULTY OF WESLEYAN UNIVERSITY, PRESENT AND FORMER MEMBERS.
MEMBERS OF THE FACULTIES OF OTHER INSTITUTIONS.
TRUSTEES OF WESLEYAN UNIVERSITY.
SPECIALLY INVITED GUESTS AND CANDIDATES FOR HONORARY DEGREES.
SPEAKERS OF THE DAY.
PRESIDENT OF WESLEYAN UNIVERSITY.

At the Opera House the alumnae and the women of the graduating class, who were waiting there, joined the procession and entered with it. Upon the stage were seated the President of the University, the speakers of the day, specially invited guests, and the Trustees and Faculty of the University. The rest of the procession occupied the floor of the house. The boxes and most of the balcony were reserved for the families and friends of the Faculty, of the alumni, and of invited guests. The addresses of the morning were delivered by Stephen Henry Olin, LL.D., '66, and Rev. Herbert Welch, D.D., LL.D., '87, President of Ohio Wesleyan University.

Following these addresses the Bachelor's and Master's degrees in course were conferred after the usual formula, and President Raymond then proceeded to confer the honorary degrees of Master of Arts, Doctor of Science, Doctor of Divinity, and Doctor of Laws. The candidates for these degrees were introduced to the President individually, those for the degree of Master of Arts and for the degree of Doctor of Science by Professor M. B. Crawford, those for the degree of Doctor of Divinity and for the degree of Doctor of Laws by Professor C. T. Winchester; and on investing them with the appropriate insignia of the degree, the President addressed each as follows:

ABRAM SHECKLETON KAVANAGH. Because of your success as a preacher of the gospel, and because of that clear perception of the ways of men, and that masterful tact which has made them the servants of your purpose in building at once the church, the hospital, and the Kingdom of God, I admit you to the degree of Master of Arts.

ROBERT FULTON RAYMOND. Because of that intellectual interest that has made you a purchaser and reader of the best books in many fields as well as because of your professional work, and because of that recognition which you have won in your own State, as the advocate and servant of every righteous cause whether political or religious, I admit you to the degree of Master of Arts.

EDWARD BENNETT ROSA. Because of your scientific mastery of the far reaching laws that underlie the phenomena of physics, and because of that genius which you have shown for invention

and for the application of your knowledge to the practical problems of life, I admit you to the degree of Doctor of Science.

CHARLES WARDELL STILES. As an eminent zoölogist widely known by your writings both in France and Germany, and because of your special studies in parasitic life, a field in which you have no rival, studies which have made the nation a debtor to you, I admit you to the degree of Doctor of Science.

ALFRED CHARLES TRUE. As Dean of the Graduate School of Agriculture, Director of the Office of Experiment Stations in the United States, you have the distinction of being the prime mover in developing the department of agricultural pedagogy and in correlating the work of agricultural research. Because of this distinction I admit you to-day to the degree of Doctor of Science.

ARTHUR WILLIAM BYRT. There is no more difficult field of Christian work on the continent than that cultivated by a few men in our great cities, a group of men who have faced and fought the conditions hostile to the Kingdom of God among the poor, the degraded, the foreigner and the neglected. Because of your success in that work, a success that has challenged the confidence of all the sanely zealous men of your church in Brooklyn, I admit you to the degree of Doctor of Divinity.

ANDREW JACKSON COULTAS, JR. It is now more than twenty years since you received your baccalaureate diploma at the hands of President Foss. You have honored that diploma by steady intellectual growth, by fidelity in the best pulpits of the New England Southern Conference, and by success in its chief administrative office. I therefore admit you to-day to the degree of Doctor of Divinity.

JOHN GALBRAITH. You have been honored by your Conference with the most responsible administrative office in its gift; and by the University in its territory with the degree of Doctor of Philosophy upon examination. Your Alma Mater recognizes the distinction you have earned, and by her authority I admit you to-day to the degree of Doctor of Divinity.

CHARLES LEROY GOODELL. Many men have made the gospel clear and convincing to the intellect. You have carried its charm

down into the sub-conscious life, and made it there the source and genesis of those commanding motives, and more consciously of that dominant choice that transmutes truth into divine life, that makes mortals partakers of the divine nature. Because of your noteworthy success in this the highest of all missions, and that too in many fields, I admit you to the degree of Doctor of Divinity.

THOMPSON HOADLEY LANDON. As an honored pastor for many years in the Newark Conference, and for twenty years past a successful administrator of the Bordentown Military Institute, a difficult and very important field, we recognize your success to-day and admit you to the degree of Doctor of Divinity.

ALBERT JULIUS NAST. Because with the spirit of your church and the genius of your father, you have for many years, with a facile pen, preached through Der Christliche Apologete a living gospel to a large body of sturdy and sterling Germans in the Central West, and in recognition of this royal service, I admit you to-day to the degree of Doctor of Divinity.

WILLIAM DOUGLAS MACKENZIE. Your wide experience and thorough training, your special studies in Edinburgh and Göttingen, and your efficient work as a Professor of Systematic Theology in Chicago Theological Seminary led us to look with confidence to your administration when called to the presidency of the Hartford Theological Seminary. Your inaugural confirmed our expectations. Your future will justify our hopes. I admit you to-day to the degree of Doctor of Divinity.

ALEXANDER HARRISON TUTTLE. You have served great churches and preached a great gospel throughout the years. It is as a prince acknowledged, both as to matter and style, among the great preachers of your denomination that I admit you to-day to the degree of Doctor of Divinity.

HENRY CLAY SHELDON. As scholar, philosopher and author, and as Professor of Systematic Theology in the Boston Theological School, with a sound head and a warm heart, handling traditional material with reverence, and facing the new age with courage, I admit you to the degree of Doctor of Divinity.

CHARLES MACAULAY STUART. As preacher and editor in former years, and as Professor of Sacred Rhetoric in Garrett

Biblical Institute, you have won the admiration of students in the class room, the confidence of the preacher in the city and on the circuit, and the esteem of those who have known you in the church both North and South. In recognition of your honors and your service, we admit you to-day to the degree of Doctor of Divinity.

DARIUS BAKER. In your call to the bench of the Superior Court of Rhode Island, the State had in view the interpretation and adjudication of interests that concern every citizen. Your well-earned reputation as a wise counsellor, a sane judge, and trusted lawyer, commended you at once for the honor. Your Alma Mater welcomes you to-day, and I admit you to the degree of Doctor of Laws.

ARTHUR EUGENE SUTHERLAND. The question of rights under the law runs as deep as liberty in society. An honor that many court but few obtain has come to you in your elevation to the bench of the Supreme Court of the State of New York. Because of this dignity worthily bestowed, and of our confidence that it will be as well maintained, I admit you to the degree of Doctor of Laws.

HERBERT WELCH. Because of that fine culture which is at once the product of the highest mental discipline and of the noblest ideals, and because of that administrative ability which has placed you at the head of one of the greatest educational institutions of your church, I admit you to the degree of Doctor of Laws.

The following honorary degrees were then conferred *in absentia:*

The degree of Master of Arts on ALONZO HOWARD CLARK, of the Smithsonian Institution, Washington, D. C.;

The degree of Doctor of Divinity on NATHANIEL WALLING CLARK, Presiding Elder, Rome, Italy;

The degree of Doctor of Laws on FLAVEL SWEETEN LUTHER, JR., President of Trinity College, Hartford, Conn.

The conferring of the honorary degrees brought to a close a Commencement, which in the variety and interest of the exercises, and in the number, enthusiasm and loyalty of the visiting Alumni, has been rivalled by only one other Commencement, that held in celebration of the Wesley Bicentennial.

FACULTY

1869

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ADDRESSES

SUNDAY MORNING,

JUNE 24

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BRADFORD PAUL RAYMOND

BACCALAUREATE SERMON

President Bradford Paul Raymond

"And they said one to another, 'Was not our heart burning within us while he spake to us in the way, while he opened to us the Scriptures?'" Luke 24, 32.

I HAVE thought that this text might justify me in speaking to-day on the following theme:

Old Altar Fires Rekindled.

That they would begin to glow, I have no doubt, if the noisy world could be hushed and the voice of Jesus could be heard again. The hearts of those two young men burned within them while Jesus talked with them by the way and opened to them the Scriptures. That was genuine fire, it was what we need now, what we always need. One frequently hears the lament that the good old times are gone, and if one frequents the prayer service of the church, he frequently hears the petition put up from devout and earnest souls, "Wilt Thou not revive us again?" I never hear it but I respond most sympathetically, "Amen!" Appropriate as this prayer is, I do not need to tell you that as measured by the fruit of the Spirit: "Love, joy, peace. long-suffering, gentleness, meekness, goodness, faith," the fathers never saw so good a day as this 24th day of June, 1906. But it is far from what it ought to be.

How often one hears the causes detailed of our bloodless religious life. With one it is pleasure-seeking. Well, there is a lot of fun to be found in this world, and there can be no doubt that a multitude of people are after it like a dog on a hot trail. Or is it the greed of gain that smothers our altar fires? What inducements the age offers! How its opportunities feed that greed! You may hear the hurrying footsteps of the young man on the dusty country road, or in the dull old town, in pursuit of gain, as well as in the dangerous thoroughfares of the great city. Or is it infidelity that shuts up the heavens and forbids the refreshing showers to fall? There is certainly enough of

it. Whatever its disguises it blinds both to the revelation in the Book and to that in the soul as well.

I think I must endorse all of these reasons. Our lukewarmness is due to pleasure-seeking, to the greed for riches, to selfishness, to infidelity, to the reign of appetite, and I think I could name a score of other reasons. We have only to read the Book to learn why the altar fires smell and smoke. On the human side there are many reasons. On the Divine side one, and one only. At our feasts we put Him at the foot of the table. But to come back to the real inwardness of this cry for the good old times, I may say that we may, as we do, shut our eyes to the defects of the past. They are buried deep in the grave of oblivion. Thank God they are. Were they all remembered they would eat out the moral heart of the age. Thank God that the grave is deep. Only the man with the pick and shovel can know of the dead men's bones and of all the uncleanness that is under that mound. Ignoring these defects, we may come back to the all-conquering faith, the splendid self-abandon, the dauntless courage of the fathers, and may justly sing:

> "They subdued kingdoms,
> Wrought righteousness,
> Stopped the mouths of lions,
> Out of weakness were made strong,
> Put to flight the armies of the aliens."

And we may justly pray that these old fires may be rekindled on the altar of our hearts.

That was a notable walk that Jesus took with those two young men on the way to Emmaus. Were he to walk this afternoon with two of our young men on the way to Cromwell, about what would he talk to them? Would their hearts burn within them by the way? Would they return to this, our Jerusalem, to relate to their fellows his words and his message? Has Jesus still power to make himself interesting? Perhaps it may seem presumptuous to assume that we know what Jesus would talk about on such a journey, as it certainly is presumptuous to assume that we know what Jesus would do were he to come to Middletown. Horace Bushnell once said "I know Jesus Christ better than I know any other man that walks the streets of Hartford." That is a startling utterance. But is it not true that where we hesitate about men, we are confident of Jesus Christ? The mind of

Jesus was never so clear to any age as it is to this. What would Jesus say in a walk with two of our young men to Cromwell this afternoon?

He came into a time in which two currents of religious thought contended for mastery. One was apocalyptic and looked for marshaled legions out of the blue sky, for the victory that smells of powder and reeks with blood. That apocalyptic hope has its canonical expression in the Book of Daniel. In his visions Daniel saw the utter destruction that was to be poured out upon the enemies of Israel and the blessings that were to come to Jehovah's chosen. While Belshazzar with his princes, his wives and his concubines drank to revelry from the golden vessels that had been taken from the despoiled house of God at Jerusalem, and praised the gods of gold and of silver, of brass, of iron, of wood and of stone, "In that same hour came forth fingers of a man's hand and wrote." And while the king's knees smote and when the astrologers were put to confusion, Daniel interpreted the haunting hand in language that has had strange carrying power. And this is the text:

> God hath numbered thy kingdom:
> And brought it to an end!
> Thou art weighed in the balances:
> And found wanting!
> The Kingdom is divided:
> And given to the Medes and Persians.

In that night was Belshazzar—slain. This handwriting interpreted to the prophetic imagination the inevitable doom of all the hostile nations that marched within the widening horizon of the prophetic vision. Sacred literature runs in types as well as other literature. When any inspired writer struck out a new type others imitated him, and so we have a number of books not included in our Bible of this apocalyptic type. These books sprang out of Israel's distress. These writers believed in the glorious destiny of this chosen people, and, when they were driven to the wall by their enemies, and there seemed no other deliverance, they predicted in glowing imagery the display of the Divine wrath against their enemies and oppressors. The Divine program was with them always one of catastrophe. They awaited, expectant, the day that should bring merciless disaster to their foes and boundless prosperity to Israel. Some phases

of this current of thought are reflected in the New Testament. And there are Christian believers to-day who are looking for some such manifestation of God's wrath and of God's grace.

But there was another current of thought in the Old Testament Scriptures. It is that represented by the Book of Deuteronomy where simple goodness in the common relationships of life and expressive of faith in God is set forth as essential, and in the book of Amos where Jehovah's charge is that the people have not met the common requirements of righteousness and mercy. He charges that they have sold the righteous for silver, the needy for a pair of shoes; that they pant after the dust on the head of the poor; that they turn aside the meek; that they profane the name of Jehovah by their gross sensuality; that they lay themselves down beside every altar upon clothes taken in pledge and in the house of God they drink the wine of such as have been fined. We find the demand in Isaiah for simple goodness: Jehovah says: "You need not stretch forth your hands to me, they are full of blood. Go, wash you, make you clean;" and also in the book of Jeremiah, where God writes His law upon the heart. We are on the way as you see to the final message: "If thine enemy hunger, feed him; if he thirst, give him drink." These two currents of thought were struggling for dominance in the hour when Jesus made his public appearance. The determination to take Jesus and make him king reflects the apocalyptic motive. The party of zealots were revolutionists. There were very few indeed either of Jesus' apostles or of his disciples whose faith was not alive with this expectation. But Jesus, with that clearness of vision, and that fine sense for the spiritual inwardness of the kingdom, is strangely free from the compromising dominance of this drastic hope. He knew that Deuteronomy and Isaiah and Amos and Jeremiah had defined citizenship in the new kingdom at another level and He attached himself to this inward view of the kingdom.

But would Jesus have nothing to say about the issues of the day? Nothing about wealth and its abuse, nothing about monopolies and their tyranny, about socialism and salvation? Will He speak only to dead issues? Has He already become a back-number? He would certainly speak on all these questions, but not as most men suppose. He does not give detailed guidance. It is a revelation to recall how many things he did not speak

about. He never said, "You shall not play cards, neither shall you dance, nor attend the theatre, nor organize a trust nor create a monopoly." What he said is far more searching and exacting.

In my judgment there is far too much fuss made about wealth in our time. If we could be caught up in some great airship and floated over the great states of this nation, what would we see? The young farmer, brown and stalwart, starting in the early morning with his team and mowing machine, his collie dog at his heels, on his way to the fields. There is joy in his heart and a kindly light in his eye, for the spell of nature is upon him, and the blue skies, the green fields, and the harvest hopes are about him. The great God is there too, ingratiating Himself into the deeper chambers of the soul and breathing utterance of Himself in the spirit of the song that he sings. Or you may see the carpenter, his kit upon his shoulder, as he makes his way to the place of his task. His little boys have followed him far out on the highway to fill his soul to overflowing with the wine of their innocent wisdom, and his wife stands in the door of his humble cottage to wave good-bye as he passes from view along the winding road. As you sweep on you may see the young woman and the man in the shop, in the factory, and in the store. They feel the buoyancy of health, the charm of youth and the joy of activity, they are hopeful with visions of the future, sensitive to all those subtle divine fascinations which bind their dual lives together: farmer, carpenter, mechanic, young men and young women, children and youth, mature manhood and womanhood, these are the people I see from our airship. There are seventy-five millions of them scattered over this continent of ours. Billionaires none! Multi-millionaires few! Millionaires, not enough of them to make a small village. I have no hesitation about the searching investigations and the urgent legislation of the time. They all indicate another moral renaissance. These great money-making organizations, like the ancient forms of government, stand for forms of progress, but they also represent, like them, the "brutality of progress." And it is the business of government to take the brute out of them. But we are making altogether too much fuss about wealth. It is far too much in the field of thought. It does not express the heart of reality. You cannot put into its vocabulary the values which Jesus came to make current.

But would Jesus say nothing of wealth and its abuse? Come with me and behold one of the visions I have seen. I saw Justice blindfolded, standing in a court severely plain, holding the scales of destiny in her hand. On one side of the scales was the soul of a man and on the other was piled the uncounted wealth of this world. It seemed as though the gold would outweigh the whole race of men. But as the blind goddess with deft touch sensed the rising scale of things and felt the soul swing downward, she paused and listened, and on the majestic column by her side appeared a moving hand that wrote "Inasmuch as ye have done it unto one of the least of these, ye have done it unto me." And then for an instant there appeared underneath the writing the beautiful face and lustrous eyes of that angel that is ever near His throne, the face of Mercy. And I saw the court of souls again, and Justice clothed in her robes of state. The scales were in her hand, a soul was in the scales, and over against it a meagre display of this world's goods. And as the majestic goddess felt the scale swing and the soul rise she looked again. No hand was to be seen and no writing appeared, but instead came a voice out of the distant past, bringing that old message of destiny: "Weighed in the balance and found wanting." And then as though out of the very column I heard a voice saying "Inasmuch as ye did it not to one of the least of these, ye did it not to me." And it was dark and I heard the clanking of chains. In my curiosity as a modern, interested in the questions of wealth, of trusts, of monopolies, etc., I asked, was the first the soul of a rich man and the second that of a poor man? Then came slowly out of the deep silence, "We know no rich and no poor here, only souls." Here is food for reflection, "Only souls!" Did the visible invisible hand, and the audible inaudible voice interpret the mind of the Master?

Jesus attached himself to this inward view of the kingdom. The Sermon on the Mount gives its constructive principles. When you do alms, if your motive be "to be seen of men," you have no reward of the Father, and that is the chief matter. When you pray shut out every other consideration and remember only that your Father knoweth and careth for your needs before you ask Him. He feedeth the fowls of the air. He clothes the grass of the field. "If ye being evil know how to give good gifts unto your children, how much more shall your Father who is in heaven give good things to them that ask him?" Jesus'

teaching never stops in a relation to things. Parables, deeds, example, and doctrine, all find their meaning in the genesis of a filial relation to the Father.

In this filial consciousness and constitutive of it are all the principles of the kingdom. In this filial consciousness lie ambushed all the moral revolutions of the age. It speaks in the words of the King: "Inasmuch as ye have done it unto one of the least of these my brethren ye have done it unto me." "Inasmuch as ye did it not to one of the least of these, ye did it not to me." There is the pathos of a mother's love in this language, and the rumble of the powder cart as well. Because by it every mortal is introduced onto the world's stage as a son of God, and a brother of Jesus Christ. It is perilous to crowd the children of the King. Every conversation of Jesus must be seen in the light of this revelation. But there is another aspect of it, and that too finds its most pregnant utterance in this Sermon on the Mount, and we may notice that it is not an abstraction, not a theory for the den of the speculator, but a plan of campaign. He says to his disciples: "Ye are the salt of the earth"; "Ye are the light of the world." You cannot even make your offering at the altar if you remember that your brother has aught against you. Such a recollection would taint the offering and corrupt the filial consciousness. And here we get another hint at the originality of the Gospel, at the uniqueness of Jesus' inner life. The Mohammedan could pray "O Allah! O Allah!" at sunrise, could knife you before sunset and tumble you into the ditch, leaving you there like a dead dog, and that too with a good conscience. These two aspects of Jesus' teaching illustrate the fact that the filial consciousness and the fraternal go together. To shout for the one and flout the other is illogical, immoral and unchristian. We have not yet learned what Christianity is. What revolutions lie concealed in that utterance of the Master in which He shows that the final fellowship is not determined by blood. Hear Him: "For whosoever shall do the will of My Father, the same is my brother and sister and mother." You cannot call your brother Raca, and drop him in the scale of being, vitiating the fraternal relation without imperiling your own soul. The history of slavery in this country gives a lurid illustration of the consequences of this false relation. You cannot regard labor as a commodity to be bought and sold, disregarding altogether the laborer behind the labor, without

compromising the kingdom of God among men. And what a search-light has Jesus thrown on the relationship that ought, and that which ought not to exist between man and woman. Jesus will speak on the question of wealth without doubt, but not in terms of wealth. They are inadequate. He keeps to the high level of personal relations. He is forever after that nice sense of relationship that ought to exist between God and man and between man and his fellow man.

His sublime confidence in the working out of this program is shown in His belief in men. What confidence He had not only in Himself, as identified with the divine purpose, but in men and women of all classes, and of no class except the outcast, too degraded to be classed! How they thronged Him! They were dumb with amazement while He spoke. Do not suppose for a moment that He did not fully appreciate the foulness of the outcast woman or the grasping greed of the publican. But to the one He said "Go and sin no more," and to the other "Come down, I will take dinner with you to-day." And even to the self-righteous and insusceptible Pharisee He said, "That ye may know that the Son of Man hath power on earth to forgive sin, I say to the sick of the palsy, 'Rise, take up thy couch and go thy way to thine house.'" He spake no bitter word to Judas. No wonder that he brought again the thirty pieces of silver and went and hanged himself, saying, "I have betrayed innocent blood." Not a word of condemnation for them that accused and condemned Him. And even while the raging fever was beating in every pulse and the pallor of death was upon His brow He said to the thief by His side: "With me to-morrow in Paradise." We know little of the Gospel as yet. We have worked the doctrine of depravity to the disgrace of the Almighty and to the merciless disaster of the individual. Some far-sighted men and women have been at work building the Gospel into our prisons, shutting out black barbarism, introducing motives of hope, walking in the footsteps of Jesus, playing upon the imagination, that creative wizard of the soul, with the motives of an indeterminate sentence, and making germinant there those sentiments embryonic that make for morals, manhood, and citizenship in the kingdom. With what art and power did Jesus by His confidence in men and women play for those central motives, which once put in motion, start all the forces that make for the Kingdom of God on earth. How did He dare to trust

the Kingdom and its destiny to twelve disciples superficially instructed, and chiefly to three men only blindly appreciative of its principles, intellectually fumbling as to its inmost nature, stupidly blundering as to the method of its propagandism? Because He trusted in the better side of men. Because He knew that as the Holy Spirit took of the things of Christ and showed them unto men they would rally to those issues and pour out their blood if need be for the defence of his standard. Can any man hear that message and not feel his heart burn within him as Jesus talks with him by the way? Can Jesus make himself interesting? Have the fountains of the spiritual nature been so dried up by the fires of appetite, have they been so overgrown by the spirit of greed, that they can no longer be stirred by the breath of God? Do we know what Tennyson means when he says:

> Speak to him then for he hears, and spirit with spirit can meet,
> Closer is he than breathing and nearer than hands and feet.

In dealing thus with personal relations He seems to assume that the work of creation has not yet ceased. The new creation is going on in the soul of man. Every man creates for himself every day his own thought, his own volition, his own motives. The emphasis is upon the fact that every age has to be created anew. The child born into the world to-day can inherit his father's lands but not his father's thought. When the time comes that the child begins to think, he must create his own thought outright. Nature may stir him to action, but he must form his notion of her facts, forces and laws. Men and books may give him words, but he must give them content. He forms his motives and his volitions. As every child does this for himself, so every age is created anew by each generation. We are nearer the processes of the new creation than we are wont to think. And here is the great opportunity for the kingdom.

In this enthronement of the soul and this establishment of organic relations between the soul and the Father, thus fixing the content and quality of the kingdom, Jesus broke with wealth and made it instrumental. It is only a medium of exchange. It is not essential. Millions of the noblest souls have lived and died without it. He broke with tradition, the tradition that substituted the tithing of mint and anise and cummin for justice and mercy, and made void the law of God. It was He who taught that the Sabbath was made for man, and not man for

the Sabbath. He nullified the claims of heredity. You are not accounted for by what has gone before you. You have a part to play. The children of Abraham are not the offspring of the flesh, but sons of faith, and children of the spirit. He summons us to go out and create the new age. He gave no place to the modern materialistic mechanism, which belts us to the world of sense. This is its philosophy. Explain everything from the bottom. Work your mechanical concepts from sensation to civilization, from Eden to the New Jerusalem. Verily great is the old mechanism with its belts and pulleys; volition determined by motive, motive sprung from desire, desire begotten by sensation, and sensation but the hum of whirling atoms. You can hardly squirm on your own account. As the belts tighten upon you, you cannot even smile without a mechanical concept to illuminate the humour of the thing. Who dares say his soul is his own? Our age has been surfeited with this dreary philosophy. But we shall have to get rid of it. Great is the machine! But it is far from the whole outfit. You cannot even get a vocabulary that will tell the story of this gospel in the realm of mechanism. That language is made for things, for things that can be weighed in scales, for things that can be measured in centimetres. You cannot weigh immortal souls, nor apply a yard-stick to moral values. Jesus speaks for the new conscience, the conscience that searches everywhere in all the intercourse of men, to discover whether the live option of men is in goods or in souls. Jesus kindles the new sympathy among men. The new conscience and the new sympathy are alive with the life of the Eternal Spirit and confident with the Eternal hope that they will yet conquer. Jesus has disclosed the secret of the universe. He hears the will of God in that hidden music that sings ever as the struggle and conquest go on. Shall we yet go deeper than that inculcation of His which declares that if we would live, we must die? Has the Almighty any more secret secret than that which binds all moral beings together in the sacrifice of Him who said, "I came not to be ministered unto, but to minister?" We shall hardly get beyond God. And God Himself is at cost for the realization of His high purpose. This is the real integrating process which shall give us at length a kingdom, a moral dominion where there shall be no lie, no tears, no death, no night.

SUNDAY EVENING

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WILLIAM NORTH RICE

ADDRESS BY

Professor William North Rice

The History and Work of Wesleyan University

THREE years ago we celebrated the two-hundredth anniversary of the birth of John Wesley, the leader in the great religious movement of the eighteenth century. That celebration and the one which we are holding this year are not related to each other alone in the fact of their nearness in time. The subjects of the two celebrations are causally related, for the founding of this college was one of the effects of the great Wesleyan revival. The church which was born in Oxford could not fail to recognize its responsibility for a share in the work of Christian education.

The earliest attempt to found a Methodist college in the United States was in 1787. The foundation of Cokesbury College is interesting as illustrating the zeal for the work of education which animated the leaders of American Methodism in those early days of feebleness and poverty; but the attempt was a premature one, and the institution was not successful. The destruction of the building by fire in 1795 was a providential deliverance from an embarrassing situation. When the news of the burning of Cokesbury College came to Bishop Asbury, he wrote in his journal, "Its enemies may rejoice, and its friends need not mourn." The time when the Methodist church in America could furnish a constituency capable of supporting a college was not yet.

About the close of the first quarter of the nineteenth century the academies at Wilbraham, Kent's Hill, and Cazenovia commenced their honorable careers, and to the more enlightened leaders of the church it became obvious that the time was near when the foundation of a college might reasonably be attempted. Captain Alden Partridge, who had previously for a short time

conducted a military school in Norwich, Vermont, was induced to come to Middletown in 1825 by offers of aid from the citizens of Middletown. In that year, therefore, was established, on the present site of Wesleyan University, the American Literary, Scientific, and Military Academy. The sojourn of the academy in Middletown proved, however, to be only a brief episode in its history, or in the history of the town. Captain Partridge and his somewhat migratory school returned to Norwich in 1829. In subsequent years the institution has had an honorable history under the name of Norwich University. To the Rev. Laban Clark belongs the honor of initiating the negotiations which resulted in the acquisition of the land and buildings of the military academy for the use of a Methodist college. The proposition which was finally made by the trustees of the academy was that they would give the property to the New York and the New England Conference of the Methodist Episcopal Church on two conditions:—first, that the property should be perpetually used for a college or university; second, that forty thousand dollars should be raised for endowment. The generous offer was accepted. Eighteen thousand dollars of the proposed endowment was subscribed in Middletown, and the remainder of the stipulated sum was soon secured. In 1830, Willbur Fisk, then the honored principal of the academy in Wilbraham, was elected president. In May, 1831, a charter was granted by the legislature, and on the 21st of September, 1831, the college commenced its work.

It was a feeble beginning. The first Catalogue of Wesleyan University shows the presence of the president, three professors,* one tutor, and forty-eight students—a small establishment as compared with Wesleyan University to-day; still smaller it seems as compared with the great universities of the present time in our own and in other lands. But it was a day of small things. In 1831 the Methodist Episcopal Church numbered only half a million members—less than one ninth the combined membership of the Methodist Episcopal Church and the Methodist Episcopal Church, South, to-day; and the Methodist church was then, in far greater degree than now, the church of the poor. Mrs. Fisk used to say that, when she came to set up housekeeping in

*Four professors are named in the Catalogue; but one of them was called to another position, and never served in Wesleyan University.

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WILLBUR FISK

Middletown, she had a sofa, which was then the only one to be found in any Methodist home in Middletown. It was a day of small things as regards the educational institutions of the country in general. Of the 469 colleges enumerated in the report of the Commissioner of Education for 1903, only 62 go back to a date as early as Wesleyan University; and the colleges of those days were smaller, as well as fewer, than those of to-day. In 1836 the faculty of Harvard College included, besides the president, only five professors and nine other instructors, exclusive of the professors and instructors whose duties were entirely or chiefly in the professional schools. As late as 1848 the endowment of Harvard College, exclusive of the professional schools, was less than four hundred thousand dollars.* It was a day of small things as regards the wealth of the country. Great endowments for educational and other institutions were yet in the future. A millionaire was considered a rich man in those primitive days. Such colossal aggregations of capital as would make it possible for a man to give, from the income of a single day, twice the modest endowment with which Wesleyan University started, would have transcended the wildest dreams.

It is matter for profound gratitude that, among the very small number of educated men in the Methodist Episcopal Church in 1831, one was found so well fitted as Willbur Fisk to be the president of the new college. He was not, indeed, a scholar, as men count scholarship to-day. He was not a great thinker. His "Calvinistic Controversy" contributed nothing of permanent value to the literature of theology. His educational ideas were, in some respects, ahead of the time; notably in his recognition of the educational value of modern languages and the sciences of nature, and in his repudiation of the claim of the ancient languages to be the sole medium for the acquisition of genuine culture. But there was certainly a great deal of crudity in the educational views which were set forth in his inaugural, and which he attempted to realize in the administration of the college. He was a persuasive orator; a gentleman by nature and by practice; a man of saintly spirit, whose presence anywhere was a benediction. His was a personality strangely fascinating and impressive. He came into the aristocratic old town, where Methodism in its early days of poverty was naturally despised;

* Eliot, *History of Harvard College*, pp. 116–118.

and, by the spell of his fascinating personality, made himself recognized at once as one of the leading citizens of the town. It is doubtful whether any of his successors has ever filled a larger place in the social and civic life of Middletown. He had faith in the enterprise which he was called to lead. A striking illustration of his faith in the future of Wesleyan appears in the fact that he built a president's house which has been deemed good enough for his successors down to the present administration, and which President Raymond and his family left with regret when it seemed best for them to occupy the new house that had come into the possession of the college. The house must, indeed, have seemed a palace to Dr. Fisk's sofaless brethren in the Methodist Church. Happy, indeed, was Wesleyan University in the providence that gave it such a guardian through its years of infancy.

Well, the infant has grown. Instead of five instructors, we have thirty-six; instead of forty-eight students, we have three hundred and thirty-eight; instead of forty thousand dollars of endowment, we have one million four hundred and forty-seven thousand. More than five-fold increase in the faculty, more than six-fold increase in the number of students, more than thirty-six-fold increase in endowment.

The treeless desert over which the cadets of the American Literary, Scientific, and Military Academy marched and countermarched, has given place to the beautiful campus in which we rejoice to-day. Of the three buildings inherited from the old military academy, North College, dear old home of so many of us through those fondly remembered student days, alas! is no more. And the "ancient men" may weep for the memory of the "first house," when the young men shout for joy over the foundation of the new and more beautiful structure which will take its place. South College, which contained for many years the chapel and library, and the beginnings of the museum, is even now undergoing its transformation into a building suitable for administrative offices. The little brick building in the rear of North College (the gun-house of the military school) has been chemical laboratory, commons hall, hospital, carpenter-shop, electrical laboratory, bacteriological laboratory; what other strange destiny may be in store for it, I have no prophetic vision to reveal. But to the old buildings have been added the buildings

OLD NORTH COLLEGE

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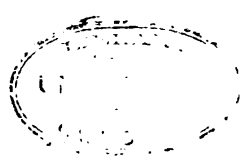
of later date adorning the campus by their architectural beauty, and ministering to the needs of the institution in its educational work:—Rich Hall, holding the treasures of the library, and handing down to future generations the name of Isaac Rich, from whose generosity the college received its first great gifts; the Chapel, furnishing a home for the religious life of the institution, memorial of the "boys in blue" whose lives were given for the country in the Civil War, eloquent forever in mute appeal for consecration to the service of God and man; Orange Judd Hall, with its laboratories and museum, bearing the name of the first alumnus to be numbered among the munificent benefactors of the college; Fisk Hall, dedicated to the study of the humanities, and bearing the honored name of the first president; the John Bell Scott Memorial Laboratory, preserving the name of him who, in the bloom of youthful enthusiasm, loving and beloved, gave his life in the service of his country and its defenders, as chaplain of the U. S. Cruiser *St. Paul,* in the Spanish War.

Of the graduate alumni of Wesleyan, 728 have finished their earthly course; 1791 are still living and working.

The influence of Wesleyan University has probably been most strongly felt in the sphere of education. Among the living alumni are numbered eleven presidents of colleges or professional schools, 103 professors and other officers of colleges or professional schools, 304 teachers in schools of lower grade; 418 in all, engaged in the work of education. Especially important has been the influence of Wesleyan University in the life of the younger colleges of the same denomination. Wesleyan gave to Boston University its first president; to Syracuse University, its first two presidents; to Allegheny college, one president; to Dickinson college, three presidents, including the present; to Ohio Wesleyan University, three presidents, including the present; to Northwestern University, four presidents, including the first and the present.

Of the living graduates of Wesleyan, 346* are in the ministry; 218 in law; 84 in medicine; 54 in journalism; 13 in scientific pursuits outside of educational institutions; 18 in offices of the state and national governments; 312 in mercantile and manufacturing business.

* This includes men ordained to the ministry who are serving as secretaries and agents of benevolent societies, but not those in educational and editorial work.



In the short time in which I may claim your indulgence this evening, I certainly cannot undertake to give in detail the annals of Wesleyan University, or even to sketch the history of successive administrations. We have an excellent historical sketch of Wesleyan University, written by Professor Winchester for the Alumni Record of 1873, which has been published again and again with alterations and additions, sometimes over one signature and sometimes over another.* I do not propose to give you that historical sketch to-night. Nor shall I undertake to give a picture of the manifold life of the college—intellectual and religious, social and athletic,—as it exists to-day. I wish to call your attention to a view of certain contrasts between the former and the latter half of the history of Wesleyan University.

About the middle of the period of seventy-five years which we are celebrating to-night, most of the colleges of the United States underwent a more or less decided change in curriculum, in administration, and in general spirit. That change may be summed up in a word by saying that the colleges of this country, at least the stronger and better ones, became transformed into universities. Both these words, indeed, have been used in various senses; and it is necessary, therefore, to define the sense in which our American institutions were transformed from colleges into universities. In England the university is primarily an examining and degree-conferring institution, though it may maintain courses of lectures, and carry on laboratory work, and be to some extent a teaching body. The colleges, of which many may be more or less intimately associated under the control of one university, afford lodging and board, under elevating and refining social and moral influences, to a body of students, while giving them instruction. In Germany, the university is both a teaching and an examining institution; and, in general, no such thing as the English college exists. In this country, the words college and university have been used often as synonymous, and there is certainly no distinction consistently observed in the use of these words in the official names of American institutions. There was, however, in the middle of the last century, a tendency to apply

* *Alumni Record,* edition of 1873, pp. xi-xiv; *Alumni Record,* edition of 1881-3, pp. xiii-xviii; *Scribner's Monthly,* vol. XII, pp. 648-661, 1876; *The College Book,* pp. 301-319; Davis, *The New England States,* vol. II, pp. 729-739.

the name college to an institution whose course of study was arranged for general culture, and whose students were candidates for the bachelor's degree; and to apply the name university to an institution consisting of a college associated with a more or less numerous group of professional schools. In more recent time there has been a decided tendency to use the name university for an institution whose curriculum includes a wide range of elective courses, some of which are courses of advanced grade, and whose student body includes a considerable number of graduates, even though there may be no professional schools. In the history of Wesleyan, the name university was first given in the expectation of the establishment of a group of professional schools; and, in some of the early years of the college, a professor of law and a professor of normal instruction—of pedagogics, I suppose we should say now—were employed with the view of making a beginning in the establishment of professional education. When the plan of establishing professional schools was definitively abandoned, the name university in its older sense became inappropriate. In later years, however, we have come to feel that our curriculum is sufficiently liberal and our grade of work sufficiently advanced to deserve the name of university in its modern sense.

It was natural that the older American colleges should be founded upon the English model. Almost universally the students lodged in dormitories, and often boarded in commons. Pretty close supervision of the manners and morals of the students was practiced; the idea of culture was emphasized; the graduates were expected to enter the so-called learned professions, and to form a sort of Brahmin caste distinct from the mass of the population. A large share of the students were candidates for the ministry, and the institutions were closely related to some religious denomination. To a very large extent, in our American institutions, the spirit and ideals of the English college have been displaced by those of the German university. Some of the newer institutions have no dormitories; and, where dormitories exist, a considerable number of the students reside outside of their walls. There is less detailed supervision of the conduct of the students. The curriculum is more varied, affording preparation for a wider range of employments. The ecclesiastical character, which formerly marked the older institutions, has become in them less pronounced, and is altogether absent in many

of the newer institutions. The ideal of the English college is culture; that of the German university is *Wissenschaft*. The English college aims to produce a gentleman; the German university aims to produce an investigator—a man who, in some subject, can advance the boundaries of human knowledge. I believe we may reasonably hope that the combination of the ideals of the English college and the German university in American institutions of learning, will yield a result better than either of its sources. Our American institutions have learned that the German spirit of investigation may yield the highest type of intellectual culture; while they retain from their English original the ennobling truth that the man is greater than the scientist. The change from the college to the university involves, in general, a change from prescription to freedom in study and in life.

This change, as I have said, took place more or less definitely in most of our American institutions about the middle of the past seventy-five years. In Wesleyan, a definite date may be given for the transition, the year 1873. The change, indeed, had begun before, and much progress in the same direction has been made since that date; nevertheless, the changes made in that year were so broad and radical that they mark nothing less than a revolution in the history of the institution.

The fundamental element of the changes made in 1873 was the transition from the fixed curriculum to the elective system.* It is true, indeed, that in the earliest years of the college, in accordance with the views of President Fisk, no fixed curriculum was announced, and no division of students into classes was made. President Woodrow Wilson has said that the University of Virginia, "under the inspiration of Thomas Jefferson, introduced a free elective system before it was thought of elsewhere"; but the institution was so poor that it was not "able to give more than enough courses to qualify a man for graduation." There was free election, indeed, but in order to be graduated a man must elect all the electives. The earliest curriculum of Wesleyan was a somewhat similar Hobsonian elective system. But such an elective system naturally and necessarily becomes transformed into a fixed curriculum, for, if all the students are to take the same studies before their graduation, it is clearly advisable that all

* A more detailed history of the curriculum of Wesleyan University is given in the *Wesleyan Literary Monthly*, June, 1905.

take them in the same order. We find that in Wesleyan University the four classes were recognized as early as 1836, and the definite four years' course, with practically all studies required, was formulated in 1841. The staple elements of that course, it is needless to say, were classics and mathematics. Modifications in detail were made from time to time, but in 1858 the curriculum of the college assumed a shape which remained practically unchanged almost to the year 1873, though in 1870 a few electives in natural science were introduced. During most of the period from 1858 to 1873, the only election allowed was a choice between Hebrew on one hand, and mechanics and French on the other. To most students the choice between Hebrew and applied mathematics was very much like a choice between Scylla and Charybdis. In 1858 a scientific course was definitely formulated; but it was only three years in length, and was merely the classical course with the classics left out. The degree of B.S. had been given on substantially the same terms ever since 1838, so that the announcement in 1858 only formulated a policy which had been acted upon for a score of years. In 1873 the curriculum was radically transformed, assuming then substantially the shape which it has kept to the present time. Three four-year courses were announced, leading respectively to the baccalaureate degree in arts, philosophy, and science; the first including both Latin and Greek, the second Latin and not Greek, the third neither of the ancient languages. In each of these courses a wide range of elective studies was provided. In subsequent years the number of electives has been greatly enlarged, partly by making elective some studies which were still required in the program of 1873, partly by the introduction of more advanced courses, which has been made possible by the increase in the number of instructors.

The most obvious change inaugurated in 1873 was the increase in the number of elective courses offered; but with this came other changes not less important in their influence. In the old curriculum there had been, properly speaking, no advanced studies. With the exception of mathematics and classics, there was in general only one course offered in any subject. Prior to 1873 the most advanced course in mathematics was a course in differential and integral calculus. During most of the time this course was required, and therefore it must be made sufficiently easy to afford the average sophomore some chance of passing up.

It certainly could not be deemed a very advanced course, as compared with our mathematical curriculum to-day. The work in classics dragged its slow length along through the four years. But the work of the senior year in Latin and Greek in the old curriculum could hardly be spoken of as advanced study. The seniors translated and parsed about as mechanically as did the freshmen; and gained little more of insight into the study of literature, or philology, or archæology.

Another innovation in the curriculum of 1873 was the introduction of laboratory work. Under the old régime, experiments in physics and chemistry were performed by the professor, but no laboratory work was done by the students. Since 1873, it is needless to say, laboratory work has been a most important factor in the teaching of science. Moreover, methods analogous to laboratory methods have been widely adopted in other departments. Instead of merely learning a text-book about literature, students have been taught to study and criticize works of literature for themselves. More and more the effort has been to put the student in the attitude of an investigator. The seminary courses, which have been established in many departments, exemplify most strongly this tendency. Under the old régime, classes were conducted almost exclusively by the method of recitation. Of course, from the earliest period, the lecture illustrated by experiments was an essential part of the teaching of physics and chemistry; but, apart from these experimental lectures, no study in the curriculum was taught by lectures until 1866, when Professor Newhall introduced a course of lectures in logic. In more recent years, while text-books are still used, as doubtless they always will be used to a reasonable extent, the lecture system, with its fuller opportunity for the expression of the individuality of the teacher, has become deservedly predominant.

That the change from a fixed curriculum to a liberal elective system has been beneficial, is doubtless the almost unanimous opinion of intelligent educators to-day. The fixed curriculum was an inheritance from the eighteenth century or from a still earlier period, when there was very little besides classics and mathematics to constitute the material for a course of liberal education. In the thought of to-day, the modern languages and their literature, the sciences of nature, and the political sciences,

OLD LABORATORY

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have attained an importance which could not have been dreamed of one hundred years ago. The field of human learning and human thought is too broad to be surveyed by any student in the four years of a college course; and the relative importance of different parts of that field to different students depends largely upon individual tastes, aptitudes, and professional plans. The elective system gives to the best students the opportunity to specialize in their chosen departments during the college course. I believe it no exaggeration to say that a student who takes his bachelor's degree at the present time in Wesleyan, or in any similar institution, may have a better preparation to undertake original work in some chosen department of science, philosophy, or literature, than could have been gained fifty years ago at the end of a two years' course of graduate study. While the opportunity of specialization is of immense benefit to the best students, the rank and file of the classes are benefited by the elective system, in that very few students can be so stolid as to get through the four years of the college course without finding some subject that they can study lovingly. For many of the average men in more recent classes, the change from the fixed curriculum to the elective system has meant the difference between four years of drudging task-work, and four years in which at least some part of the work has been brightened by the kindling of a genuine love of study. One of the best moral effects of a wide range of elective studies is the humbling sense of ignorance which is brought home to every student. Under the old régime, a graduate, if he had not learned all that his professors knew, had at least learned all that they offered to teach; and he naturally thought that he knew everything which a well-educated man could be expected to know. No student to-day can be so narrow-minded or so conceited as to think his own acquirements cover substantially the whole range of human knowledge, when he is reminded by every glance he takes at the college catalogue, or by the conversation every day in the club-house, that not only his professors but his classmates know something of studies whose very names he can hardly understand.

The change in the curriculum carried as a necessary consequence changes in the faculty. Most obviously the increased number of classes to be taught required an increased number of teachers. In 1867 there were only nine members of the faculty

in Wesleyan, and they were no harder worked than are their successors to-day. Of the half-dozen professors who divide up the territory of the one professor of natural science, the majority have each a larger number of classes to-day than that one professor had. In 1874 the number of the faculty had already risen to fifteen.

But the change from the college to the university means a change not only in the number but in the character of college instructors. In the old time, the college instructor must be a Christian gentleman, a college graduate, possessed of scholarly tastes in general. It was thought desirable, indeed, that he should show some symptoms of a special taste for the studies which he proposed to teach; but that was hardly necessary, for surely he had learned, and therefore he could teach, the whole of the college curriculum. It was not till 1830 that a particular subject was assigned to each tutor in Yale College. Before that date each tutor taught a class or a division in all their studies.* It was said of Professor James Hadley, of Yale, that to the end of his life he was competent to teach the classes of any professor in the college who might be temporarily absent. His illustrious son, the present President of Yale University, is a man of extraordinary versatility and breadth of scholarship, but he would certainly not undertake to teach all the subjects that are taught to-day in the academic department of the university. In Wesleyan, at the time of my own graduation, the professor of Greek taught French and German; the professor of Latin taught history; the professor of mathematics was librarian; the professor of English taught Hebrew; and the indefatigable president, Joseph Cummings, who seemed to bear on his Atlantean shoulders the whole burden of the college, taught psychology, ethics, evidences of Christianity, economics, constitution of the United States, and international law. Logic, rhetoric, and English literature had been subtracted from his domain only two years before. The primary quality demanded of an instructor in the modern university is that he be in some considerable degree a specialist in his department. Advanced courses, seminary courses, laboratory courses, simply cannot be conducted by a cultured gentleman who knows nothing in particular of the subject which he is to teach. Alas! sometimes it comes to pass

* H. A. Beers, in *The New England States,* vol. II, p. 715.

in the administration of a university that a specialist fitted to teach certain studies which must be taught, lacks some of those general intellectual and moral traits which would be desirable in a college teacher. "I wanted to get a *man,* but I could only find a Ph.D.", is said to have been the pathetic lament of a college president who had found himself unable to find a candidate for a certain position whose general characteristics were exactly what would be desired. The first professor in Wesleyan who had studied and traveled in Europe in special preparation for his departmental work, was Professor Van Benschoten, who was elected in 1863. I well remember what an inspiration it was to us young fellows to hear him talk of the professors in Berlin and the monks on Mount Athos. The first member of our faculty who had received on examination any non-professional degree higher than that of Bachelor, was elected in 1867. Since then we have had Ph.D.'s, M.A.'s, and M.S.'s galore on the faculty pages; and the men whose names have not been marked by these degrees have often had a more extended course of special study than some of those who have received the degrees.

The university both demands and attracts a larger number of students than the college. A liberal elective system in an institution with a small number of students is enormously expensive. It costs as much to teach a class of one as to teach a class of ten; and this simple economic condition makes the desirable number of students much larger in the university than in the college. In the old days, the college, with its uniform classical curriculum, made little appeal except to candidates for the learned professions, and above all it appealed to candidates for the ministry. The elective curriculum of the university offers attractions to men and women who are preparing themselves for a much wider range of employments. From this point of view there is great interest in a comparison between the statistics of our alumni in 1873 and in 1905. In that period of thirty-two years the number of ministers has increased only 4 per cent., that of lawyers only 44 per cent.; while the gain in the number of physicians has been 87 per cent., in the number of teachers 158 per cent., in the number of men of business 154 per cent. The advanced work in chemistry and biology has enabled those who were contemplating the profession of medicine to gain in college an important part of the preparation for that work. The introduction of advanced

electives in all departments has made the college a place in which men and women can fit themselves for the higher grades of educational work. The opportunity to take courses dealing largely with modern life, social, economic, and political, has made the college attractive to those who are to be men of affairs.

That the change in the curriculum in 1873 has resulted in a large increase in the number of students, there can be no doubt; yet circumstances prevented an immediate response to the call for larger numbers which the new curriculum made. The causes upon which the changes in the number of the student body depend are many and various. From the foundation of the college in 1831 to 1838 there was a very rapid increase. The 48 students of 1831 had increased in seven years to 152. The illness and death of the first president, and the interregnum which followed, checked the progress, and the number of students diminished. It never again reached the number attained in 1838 until 1869, when the college, and in some degree the country, had recovered from the fearful losses of the Civil War. In 1869 the number of students was 153, one more than in 1838. In 1872 the number had risen to 189; but then came the collapse of the endowment, placing the college in a position of greater peril than at any time since the struggles of its infancy. Almost simultaneous with this financial disaster was the establishment of two other Methodist colleges, Syracuse and Boston, within what had been the patronizing territory of Wesleyan. As a result of these conditions, in the next eight years the number of students fell to 163. In 1880, however, the peril resulting from the collapse of the old endowment had been safely passed, as the result of the munificent gifts of George I. Seney and others, and the college started on the period of the most rapid growth in all its history. In the twenty years from 1880 to 1900 the number of students increased from 163 to 350.

Not only have the American colleges welcomed to their halls *men* of a larger variety of professional and business plans than formerly. Many of the older colleges have opened their doors to women also, and a large share of the newer institutions have been co-educational from their foundation. Women were first admitted to Wesleyan in 1872. In the previous college year there was one woman in Bates college—the only woman college student in New England. To-day, besides those in institutions exclu-

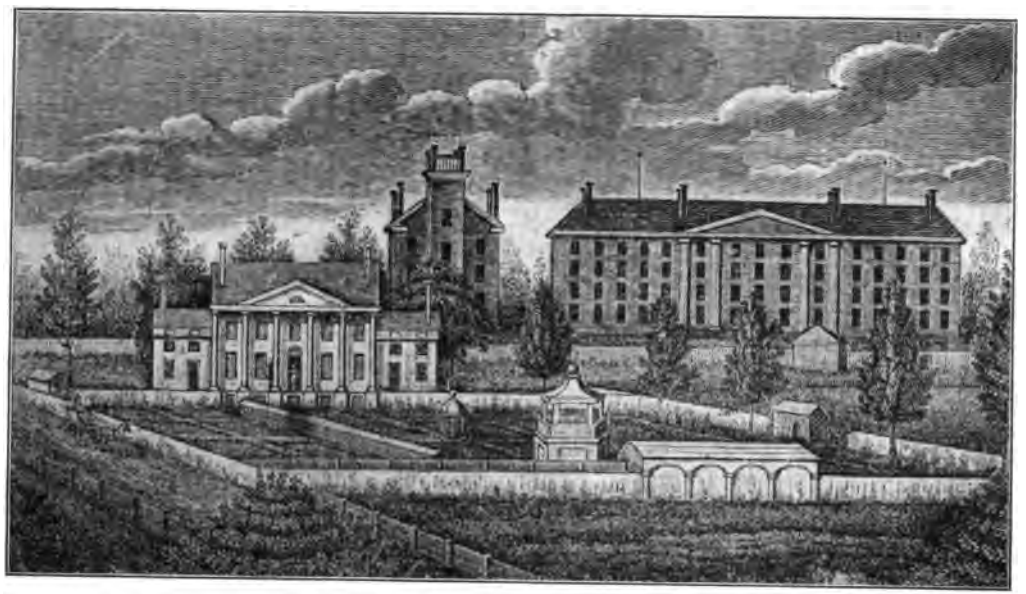
sively for women, there are women in Bates College, Colby University, University of Maine, Middlebury College, University of Vermont, Harvard University, Boston University, Tufts College, Massachusetts Institute of Technology, Clark University, Brown University, and Yale University; and in all these institutions co-education—the simultaneous instruction of men and women in lecture-room and in laboratory—has existed in greater or less degree. In two of these institutions only graduate women are admitted; in several of them the women are organized into more or less distinct women's colleges. What changes of organization or administration may be deemed hereafter practicable or advisable in Wesleyan, I will not undertake to discuss; but under some conditions or other the privilege of education will doubtless continue to be offered to women in Wesleyan University.

With the old fixed curriculum, there was little inducement for students to remain for graduate courses. Yet the names of a few resident graduates appear in some of the early Catalogues. In 1872 the names of two graduate students appear in the Catalogue, and since that time there has been only one year in which there has not been an enrollment of more or fewer graduate students. The number the present year is seventeen. Since 1891 the Master's degree has been conferred on examination on graduate courses, which, however, are not necessarily in residence.

The university demands not only larger endowments for the maintenance of instructors than the college, but requires also vastly greater material facilities for instruction and investigation. President Garfield is said to have declared that Mark Hopkins on one end of a log, and a student on the other end, would have made a first-rate college. Mark Hopkins on a log might have furnished a fairly satisfactory basis for a college; it would certainly not have been an adequate foundation for a university. The university demands laboratories, museums, libraries; the old college could get along nicely without them. In 1873 Wesleyan University was possessed of one compound microscope, which was of a pattern already antiquated. We had no chemical laboratory in which there was opportunity for students to work, until the completion of Judd Hall in 1872. The library in 1873 numbered about 25,000 volumes. We have about three times that number to-day, but the library of 1873 was

more nearly adequate to its uses than the library of 1906. In fact, before 1873 the library was hardly used at all. It was open only four hours in the week. Under such conditions, it could not be used for reference, and only rarely were books taken by the students for use at their rooms.

The change from the college to the university has brought not only freedom of study, but freedom in other phases of student life. "The government of a well-regulated literary seminary is patriarchal," declared the first president of Wesleyan in his inaugural address. The early Catalogues of Wesleyan used to contain the statement, "The discipline of the institution is eminently moral and paternal." Tremendously paternal it was in the old days, when the professors made their daily tours through the dormitory to see if the students were in their rooms and studying, and when the Catalogue advised parents "to commit the funds of the students to the president or one of the professors, who will attend to their wants, and discharge their bills." The latter piece of paternalism only vanished in 1873. Prior to 1873 excuses were required for every absence from chapel or recitation, and unexcused absences counted on the standing. The standing of students was computed chiefly on the daily recitations, the term examinations and the annual examinations being allowed very little weight in the computation. The one coveted prize was the valedictory, conferred on the man whose sum total of marks, minus demerits, for the four years was a little in excess of that of others in the class. The revolution of 1873 included a reform in the system of routine administration. The necessity for inquisitorial investigation into the private affairs of students was removed by allowing a moderate number of absences from college exercises without the rendering of any excuse. The pernicious and demoralizing competition for the valedictory gave place to the present non-competitive system of honors in general scholarship and honors in special departments. The method of computation of standings was changed so as to throw the chief weight upon examinations. The scholarship that can take, at the end of a half-year or a year, a broad view of an entire subject in its coördination, is far more worthy of cultivation than that which learns the daily lesson with punctilious thoroughness, and forgets it to make room for the lesson of the next day.



WESLEYAN UNIVERSITY

1831

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That these changes were beneficial none can doubt; least of all those who experienced the effects of the old system. Those of us who felt the fret of the old system of excuses, and who, in the competition for the valedictory, learned lessons more minutely than they were worth learning, spending time and strength which ought to have brought us a broader and deeper scholarship, are grateful that future generations of students are not to be subjected to some of the pernicious influences which were about us in our young manhood. But in this imperfect world good and evil are mixed; and there was some good in the old grind, and the freedom of to-day brings some evil. We did attend to college duties with a faithfulness and punctuality that few students of to-day know anything about; and the art of recitation, as it was practiced in the old days, is a lost art.

In the general atmosphere of freedom, which belongs to the university, it is natural and fitting that in increasing measure the responsibility for the good conduct and the good name of the college body should be thrown upon the students themselves. The trustees, indeed, and the faculty cannot abdicate the authority with which they are invested. The trustees must guard the financial interests of the college, elect the members of the faculty, and control the general policy of the administration. The internal government of the college belongs of right where it is placed in the by-laws of the institution—with the faculty. The undergraduates are not invited, and will not be invited in the near future, to make the laws of the college, to elect or to remove instructors, to prescribe the course of study, or to decide what classes of persons shall be eligible for admission to the institution.

But college undergraduates are not infants, and there is no reason why they should be treated as infants. The loyalty of the students of Wesleyan, shown in many ways, and recently shown in that splendid subscription for the rebuilding of North College which made every instructor and every alumnus proud of the boys of Wesleyan—that loyalty makes it reasonable for the views and feelings of the student body to be consulted in the administration of the college. A large share of the friction in college government has come from the fact that faculty and students, inevitably looking at things from different standpoints, have failed to understand each other. Full and frank conference

between representatives of the faculty and the undergraduate body, as now provided for in Wesleyan University, cannot fail to lead to better understanding and to more harmonious coöperation for the progress of the college. We are all proud of our honor system of examinations. It has not, indeed, ushered in the millennium. But no one in Wesleyan doubts that examinations are far safer when guarded by the honor of the students than when guarded by the vigilance of the instructors. And the atmosphere of mutual trust makes the whole life of the college purer and nobler. In the Athletic Council, representatives of faculty, alumni, and undergraduates have worked together harmoniously to raise the standard of athletics. The responsibility of government the faculty can never abdicate; but particular functions of government, from time to time, under reasonable limitations, they may delegate. As the undergraduates are more trusted, they will show themselves more worthy of trust.

The educational ideals which wrought the transformation of the college into the university, are in no sense peculiar to Wesleyan. They belong to the spirit of the age. The faculty of 1873 did not originate them, but did recognize them, and did in a spirit of progressive conservatism adjust the work of the institution to them. Nor is it any disparagement to others to name the one whose vision of the new ideals was more clear and steadfast than that of any other, and whose influence, more than that of any other, guided Wesleyan University in its progress from the old education to the new. For more than a half century John Monroe Van Vleck has been a potent influence in the faculty. As professor emeritus, relieved from the detail of daily duty, he still abides with us to give to his Alma Mater the benefit of those priceless counsels in which "old experience" doth

"Attain
To something like prophetic strain."

Bright and long be the twilight of his earthly day.

"Serus in cœlum redeas."

Wesleyan University, as we have seen, was eminently a child of the church. The controlling spirit and purpose in its foundation were intensely religious. As we contemplate the changes which have passed over its curriculum, its administration, and its ideals, we cannot fail to ask the question, can the religious life of the college survive in the university?

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JOHN JOHNSTON

Intensely religious as was the spirit in which Wesleyan was founded, it was not a spirit of narrow sectarianism. The charter of 1831 provides that "no president, professor, or other officer shall be made ineligible for or by reason of any religious tenets which he may profess, nor be compelled, by any by-law or otherwise, to subscribe to any religious test whatever." Non-Methodist instructors were employed in the earliest years of the college. In the charter of 1870, the provision "that at all times the majority of the trustees, the president, and a majority of the faculty shall be members of the Methodist Episcopal church," is distinctly a backward step. It was a protest against a supposed tendency to secularism in the conduct of the university—a useless safeguard against imaginary dangers.

The university demands freedom—freedom of investigation, freedom of teaching. It must

> "Seek the truth where'er 'tis found,
> On Christian or on heathen ground."

It must teach what it believes to be the truth, and can be bound by no creeds or traditions. But there was freedom of thought in Wesleyan in the early days. Dear old Professor John Johnston, with his simple faith, for which there existed and could exist no conflict between science and religion, was as unshrinking and courageous in his treatment of the scientific questions of his day, as any one of those who have inherited a share of his wide domain has ever been or need ever be. If Wesleyan to-day is broad and free in its hospitality to new truth, it is only because its professors have inherited the spirit of the fathers.

The more varied constituency of the university, as compared with that of the college, leads inevitably to more heterogeneous religious conditions. In a theological seminary, it may or may not be the case that the students will all be saints of the purest type, or possessed of the most aggressive evangelistic zeal; but they will pretty certainly all be church members, and most of them members of a single church. So long as a college is thought of chiefly as a place of preparation for candidates for the ministry, it will naturally be in this respect somewhat like a theological seminary. Appealing to a wider constituency, the university is likely to have a somewhat smaller proportion of church members, and especially a smaller proportion of members of any one church.

The freer life of the university is unfavorable to definite prescription in matters of religious observance. The abolition of compulsory attendance at church, whether on the whole wise or not, was at least a change in accord with the spirit of university life, and in accord with the general spirit of an age which has little faith in any attempt to enforce piety by legislation. The religious life of the institution has come to depend less on services prescribed, instituted, or controlled by the faculty; more upon the spontaneous religious activity of the Young Men's Christian Association and the Young Women's Christian Association, to whose work the faculty contribute, not authority and control, but sympathy, influence, and coöperation.

If Wesleyan has been a Christian institution in the past, it has not been because a quarter of its trustees have been elected by certain Conferences of the Methodist Episcopal Church, nor because its charter required its president and a majority of its trustees and faculty to be members of that church, nor because absence from Sunday services was liable to bring upon a student demerits, censure, or suspension. Said Bishop Foss in his inaugural as President of Wesleyan University, "My chief hope of the highest moral and religious influence over students lies in the personal character of their instructors." The influence of his own character in those years of his presidency was a noble illustration of his words. Yes, Wesleyan has been made a Christian college in the past by teachers whose words and whose life were an inspiration; but perhaps no less by students who brought from Christian homes the benediction of their fathers' counsels and their mothers' prayers, and through whose lives the influence of those Christian homes was diffused in the community around them. If Wesleyan is to be Christian in the future, it must be, as in the past, by the life of its members. It is for us who make up the constituency of Wesleyan to-day—trustees, instructors, students, alumni, patrons—it is for us and our successors to determine whether the spirit of the founders shall abide; or whether faith and loyalty to truth shall give place to cynical skepticism or flippant indifferentism, and the consecration that ennobles life be swamped in the tide of frivolous amusement and self-indulgence.

As the spell of holy memories rests upon us, we feel the presence of other forms and faces than those revealed to sight. The

face of Fisk, sweet and gentle as that of the beloved disciple, beams upon us in benediction. The majestic presence of Olin speaks again in those tones to which men listened in solemn awe as to the thunder of Niagara. And with these and others of the old time are those whom some of us have known, and from whose lives an inspiration has come into ours:—Newhall, our St. Chrysostom, whose wondrous eyes, like those of the divine child of the Sistine Madonna, seemed to look through earthly things into a world that grosser eyes could not see;—Harrington, whose life was

> "The measure of a blessed hymn,
> To which our hearts could move,
> The breathing of an inward psalm,
> A canticle of love;"—

Westgate, whose character of stern and stalwart integrity blossomed in the night of sorrow into the consummate flower of saintship. But "the time would fail me to tell" of those whose presence here has been an inspiration. And not alone those whose life-work was here in college are with us to-day in spirit: those no less who lived here as true men through their student days, and went to other spheres of duty. In the pulpit, in the courts of justice, at the bedside of the sick, in the halls of school and college, in the far-off lands of darkness whither they bore the light of Christian truth, on southern battle-fields where they gave their lives in that multitudinous vicarious sacrifice by which our nation's life was redeemed, they served their generation by the will of God, and passed to their reward. "Wherefore, seeing we also are compassed about with so great a cloud of witnesses," let us, with a deeper devotion, with a more strenuous purpose, resolve that the sacred inheritance in which we rejoice shall be transmitted unstained to those who follow us. The words of our sweetest singer come to our hearts with a deeper meaning, since his voice, too soon for our fond wish, has joined the choir of the immortals—

> "O ivied walls, O storied halls,
> O shrine of long ago,
> The altar fires our fathers lit,
> Shall still more brightly glow."

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TUESDAY AFTERNOON

June 26

COMMENCEMENT LUNCHEON.

When the hour for speaking had arrived, President Raymond introduced as the toast-master of the occasion Professor Caleb Thomas Winchester, '69. Professor Winchester was greeted with long-continued applause, and in taking charge of the exercises spoke as follows:

PROFESSOR CALEB THOMAS WINCHESTER,
Toast-master.

Mr. President:

I esteem it, sir, a very great honor, to have the privilege of standing here to-day at this, as I suppose, the largest gathering of our alumni that has ever assembled. I could wish indeed that somebody more worthy to stand here were in my place; and yet to a modest and unpretentious man like myself, must come the contemplation that the more humble his own remarks, the more brilliant will be the eloquence of those who follow; and I am sure that the speeches you are to hear, against the dullness of your toast-master, will "stick fiety off" indeed. I shall detain your attention from them but a few moments.

We are met here to-day to commemorate the 75th anniversary of the founding of our college; yet I am reminded, first of all, that Wesleyan is really a very young college. And that, not so much by the sounds of effervescent juvenility that fill the room, but rather because I see all about me here men still in the active work of life who can remember almost the whole course of our college history. We had fondly hoped to see here on this day the man who was the first graduate to receive a diploma from Wesleyan University; it is only a little more than a year ago that he was walking our streets in the vigor of a hale old age. Nay, some of us younger men who, despite a few gray hairs, resent any imputation of age and insist that we still belong among the lads—we find our memory reaches back more than half way to the date when Wesleyan was founded. For, in fact, the three score years and ten that are the allotted span of man's

life suffice only for the earliest youth of a great institution. Our Alma Mater is still in the morning of her years; beautiful, hardly as yet venerable. She has no dim and misty past; no dark ages, no tradition of a hoary eld. But if less venerable, I think our Alma Mater is all the more dear on that account. We have a sense of having known her all her life. She can still, as it were, call her children together in a family gathering. And surely there is among us a sense of intimate relationship hardly possible among the alumni of an older institution. One doesn't care so much for remote ancestry—they were dead too long before we were born. It takes some sort of artificial and factitious stimulus, some ancestral Society of Colonial Sons or Dames, to awaken much interest in them. But it is easy to carry one's filial sentiments as far back as our grandfathers. And there are only three generations of us, children of Wesleyan, and all three generations are alive and here together.

In truth Wesleyan has but just passed though her period of experiment and adolescence; old enough to have won her place and proved her quality. Yet there are some good reasons why 1831 seems to us of to-day a long while ago. For in fact it was the beginning of an age—almost, we might say, the beginning of modern history. The founding of Wesleyan is not the only event of note to signalize that period. Several other things happened about the same time. It was in 1830 that France drove the last of the Bourbons from her throne and began to reap the peaceful fruits of her great Revolution in an orderly, constitutional monarchy. It was in 1832 that, after long and heated discussion, England passed the Reform Bill which equalized her representation and admitted for the first time her great middle class to a share in government. Within four years thereafter she had repealed the Corporation and Test Acts, improved her poor-laws, given up the antiquated system of tithes, and abolished slavery throughout the British empire. All over Europe, indeed, in the years 1830–1835, a great steady wave of political and social reform, a revolution wise and ordered, was everywhere slowly rising. On this side the Atlantic we had few of these evils intrenched in immemorial usage; but, if I mistake not, it was in 1831, the very year of our founding, that the American Anti-Slavery Society was founded in Philadelphia, and young William Lloyd Garrison set up his *Liberator* in Boston. That

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1872

great movement was just beginning, to end only with the agony of Civil War and the reconstruction of our national life.

But it was not alone in social and political history that the date of our birth marks a new era. In 1831 and 1832 that young fellow of Oriel college on Sunday afternoons used to mount the pulpit of St. Mary's Church in Oxford, and then—to use the words of one of his young admirers—"in the most entrancing of voices, break the silence with words and thoughts that were a religious music, subtle, sweet, mournful," thrilling the hearts of all who listened. Thousands who, like young Matthew Arnold, could never become the disciples of this man John Henry Newman, were yet stirred by his solemn eloquence to a deeper sense of spiritual things, a new recognition of the supreme demands of religion. But it was only two years before that another religious teacher and educator, Dr. Thomas Arnold, was beginning his great work at Rugby, a work whose influence was to supplement and correct that of Newman, and start another and, to a certain extent, antagonistic school in the religious thought of England. And it was in the summer of 1832 that Ralph Waldo Emerson, revolving in his mind many thoughts, went up into the solitude of the White Mountains to meditate his duty, and came down to sever his connection with the old North Church of Boston; next year, went over to England to shake the trembling hand of the great philosopher of the last generation, Samuel Taylor Coleridge, and to spend one night on the moor of Craigenputtock in high converse with the grim young philosopher of the new generation, Thomas Carlyle; and then came home to Concord to preach the Cambridge Divinity Address, to publish the Nature and become the apostle of the "newness," the teacher of Transcendentalism. Tractarianism, Liberalism, Transcendentalism; certainly they all had at least this in common, that they stirred men's thoughts profoundly and forced attention upon the deepest questions of philosophy and religion. They announced a new age of thought.

So in literature, perhaps even more sharply than in politics and religion, I need hardly remind you that the period of our founding marks the dividing line between the old and the new. In 1832 the two great leaders of literature in Europe, Goethe in Germany and Walter Scott in England, both died within a few months of each other. In England the men who had made the

great literature of the previous thirty years were now all dead or silent; the new voices were just beginning to make themselves heard. In the summer of 1831, Thomas Carlyle, come up to London from Craigenputtock, was trying to find a publisher for that epoch-making book, the "Sartor Resartus," which was to find its first real public in Boston. In 1832 Alfred Tennyson published the first volume of his poems which contained new thoughts as well as new music, and in 1833 Robert Browning made his first appeal to the public with his Pauline. The new literature was begun.

I will not weary you with such details. I need only mention in addition that the date of 1831 serves also excellently well as a dividing point in the history of science and the mechanic arts, separating us from that happy age when science had not filled us with hurry and worry, the age of quiet and blissful ignorance when men lived without rapid transit and died without bacteria. One fact will suffice. At the beginning of 1831 there were, I think, about 20 miles of railway in the United States, on which cars were drawn by horses; within five years over $50,000,000 had been invested in railroads in this country. The wonderful era of applied science, with all its manifold influences upon economic, social, political and even moral life, had opened. The bacteria were to come later.

The time was marked by the expansion of all forms of activity, and by a sense that all institutions and beliefs were to be reviewed and recast in the light of a larger philosophy. When young Mr. Emerson gave his first course of lectures in Boston, in a winter of the early thirties, he announced as his subject, "The Philosophy of Modern History, or the Foundations of Religion, Politics, Science, Literature and Art, in the Nature of things, and the action of General Causes upon them at the present day."

Well, now it was not merely by accident that the founding of Wesleyan University coincided with all these things. Our Methodist fathers and grandfathers felt the impulse of that wave of thought then going round the world. They were not men of narrow minds or narrow outlook. They were fearful of an unintelligent religion and of an irreligious intelligence. They sought the truth, equally ready to conserve the old and to welcome the new. And it was in this spirit that they founded Wes-

leyan University. They dared to put into its charter the provision that "no by-law or ordinance shall be established which shall make the religious tenets of any person a condition of admission to any privilege in said university; and that no president, professor or other officer shall be made ineligible for, or by reason of, any religious tenets that he may profess, nor be compelled by any by-laws or otherwise to subscribe to any religious test whatever." This, I judge from his address the other evening, was liberal enough to satisfy even Professor Rice. Those of you who listened to that eloquent address need no other proof of the position that Wesleyan University has maintained from that day to this—by ideals, by temper, by educational methods, in the class of the first New England Colleges. We are all proud of our Alma Mater, of her seventy-five years' work and history; if any Wesleyan alumnus isn't, there must be something the matter with his head or his heart.

The first toast on our list is The Old Faculty, and it will be responded to by one who once was himself the honored and beloved President of Wesleyan. I trust, however, that he will not interpret this phrase "The Old Faculty" to mean the faculty of which he was the head; because I was myself a member of the faculty then—in fact before he was; and if he isn't sensitive on this matter of age, I own that I am. I would not venture in his presence any word of idle compliment; but I am quite sure you will all agree with me that no better representative of Wesleyan manhood could be found, courteous, scholarly, prominent in education and religion, maintaining through the years the dignity of a blameless life. Yet no man is perfect. We have heard it remarked that to err is human. And the sad thing is that the mistakes of life can never be retrieved. This president, when just sweeping up to the meridian of his fame and influence, with that error so characteristic of noble minds, for one fatal moment mistook the call of duty and lapsed into the Episcopacy—whence there is no more rising. We all revere the bishop as in duty bound, but I shall introduce him here with that more intimate title, Cyrus D. Foss, Ex-President of Wesleyan University.

BISHOP CYRUS DAVID FOSS.

The Old Faculty.

I FEEL like introducing myself with an incident which I heard from the lips of one of our recently elected and younger Bishops. He told me he had recently had a visit from his wife's father, who, when he had been his guest for several days, was accosted one day by his granddaughter in this way: "Grandpa, I observe that your blessing at the table from day to day is very felicitous, and sometimes very discriminating." That led the old gentleman to smile and to wait a little to see what might be coming next. She said, "Yes, I observe that at dinner, when we generally have a joint or a steak, you always thank God for these *new* mercies; but at breakfast when we often have hash, you thank God for these *continued* mercies."

I seriously doubt whether this particular audience is ready to thank God for all the continued mercies that come to it. I have been here so many times since I ceased to be President of the College, and have spoken on so many occasions; and then last Sunday I was twice thrust before your eyes in public; and this morning again the Board of Trustees placed me before the eyes and ears of the Alumni: so you may well be weary of continued mercies. I am very much obliged to the toast-master for two reasons. I shall not make the blunder that he suggested as possible to me with regard to who constituted "the Old Faculty." I know better than that. I know the Faculty to which he belongs is a younger and recent one, though his Class dates back to '69; and that makes him the next oldest fellow on the program to myself. I am glad that he has talked so much condensed and wonderfully polished and beautiful good sense that nobody else this afternoon is bound to bring forth any of that rare article. I am obliged also to the President for having announced him as Professor "C. T. Manchester"; else I would not have known but a repeating rifle might bring me down any minute.

But for the Old Faculty. I came here in the year 1850, a callow boy of 16, full of ambition and hope and joy, and found the four years from 16 to 20, in many respects (as I look back over my whole career since), the best four years of my life. I was in perfect health, I was well prepared when I came, I

CYRUS DAVID FOSS

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was a tolerable student, I loved my instructors, I enjoyed every book I had to read or recite upon, and had a good time. I passed through the four years accumulating recollections which have been an inspiration to me from then till now.

The Old Faculty: That doesn't take me back to Willbur Fisk, for I never saw Dr. Fisk: but oh, his fragrant memory! How it lingered here, and was an inspiration to every officer and every student. Nor was Joseph Holdich here at that time. I afterward became his pastor, and knew him very well in New York, and learned to appreciate the stories that came down to our time about his near-sightedness, and the immense and gracious courtesy which led him, it is said, actually to bow to a cow and say "Good morning, Madam."

I well remember the majestic form of Stephen Olin moving about the campus. He was then broken by disease and feeble, and passed on to his reward just a year after I entered college. I never heard one of those mighty sermons, the reputation of which came down to us, and concerning which we were told that, when the Congregationalists were going to their second service at half past one on Sunday, the Methodists were walking home after a baccalaureate sermon of from two and a half to three hours in length, the last half hour having been spent in keen regret because the sermon was about to stop. I never heard Olin preach one of those sermons; but I did hear in the Chapel those little lectures he gave us students in which he rose to such lofty ethical majesty that we would have thought it a mortal sin to turn round in the wrong direction. I remember that on one occasion, he told the boys, after a broken woodhouse door had been piled on a bonfire, of the awful sin of theft, and that he did not wish to know who the young men were who could do such a thing as that, for he never could respect them any more. I never heard him preach, I say; but I did hear his lectures on the Theory and Practice of the Scholastic Life, in the little old basement of South College, afterwards a coal hole. That is where the Chapel was, where we used to go to morning prayers at 6 o'clock, sometimes with bedquilts around our shoulders; and then directly to a recitation before breakfast. The dear old Doctor would walk around the campus and smile upon our games; and we often saw, holding one of his fingers, that little boy whose tall and stalwart form will

appear before you to-morrow. Once that little boy was heard to say, as he was walking across the campus one day with his hands behind him, " God forbid that I should ever be the President of a Methodist College."

Dr. Charles K. True: I cannot characterize him in a word. A splendid genius in the pulpit, a brilliant teacher, often relieving our minds of the personal responsibility of reciting by pouring forth the eloquent stores of what was uppermost in his mind, whether it had to do with the subject of the lesson or not; and I fear we led him on.

John W. Lindsay: sleek, spare, young, bright,—I cannot forget that he taught me to love to scan the Latin poets, and inducted me into the mysteries of Aleph, Beth, Gimel, Daleth, and discoursed learnedly about Qamets Chatuph.

Harvey B. Lane dug around the Greek roots with great skill and got deeper than any of the class did. He always had stock stories to get off to each class; e. g., when on a sultry hot day some fellow would come in with too scanty a toilet, because of the heat, he was likely to say to him, " Mr. Smith, don't you think that you may get to the Georgia costume yet?" Well, Mr. Smith always had to ask what that was, and was told, " A shirt collar and a pair of spurs."

Dear old Dr. Johnston, Prof. Johnnie,—yes, that is what we called him, and so we shall always think of him. I do not believe there is any professor in this College to-day who knows so much about so many sciences as Professor Johnston did; or ever will be again, to the end of time; for he knew something, and a good deal, about all of what were called " the Natural Sciences," and taught the whole of them. We got at least the beginnings of them from him. He was delightful; yet now and then, in spite of all his sobriety and sweetness, he would turn upon some student so that he would not forget it; as my next senior colleague could tell you. Once in the old brick building he was called upon to recite in anatomy. The Professor asked about the joints of the lower extremities. The student told about the ball and socket joint at the hip and the hinge joint at the knee, and made a perfect recitation as he almost always did; as he was about to sit down, he said, "Professor, if that arrangement had been reversed, in the order of nature, and the ball and socket joint had been at the knee and the hinge joint at the hip, it would not

STEPHEN OLIN

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have done for a man to get 'boozy,' would it?" The Professor looked at him as black as he ever looked at anybody, which wasn't very black, and said "Next!" When the next had recited and taken his seat, he turned his eyes half way toward Henry W. Warren and said, "It always pains me to see young men prostituting their energies by attempts at wit."

With the account of these dear old professors of those days, I must include one other professor and one tutor; and then give my place to those who are to follow me, for fear of this Winchester rifle at my right hand. I will say this. Of all the instructors I ever had, none on the whole was to me quite so great an inspiration, (possibly because I was always fond of mathematics, even in boyhood, and when in the district school at the age of eleven, would sit up until midnight, if my parents would let me, to work out the hard problems at the end of Daboll's arithmetic; but largely for reasons more personal to the man), no man ever was to me, on the whole, so inspiring and admired a teacher as Augustus W. Smith, author of the book on Mechanics in the college course in those days, which few ever mastered. He was a gracious, sweet Christian gentleman. And yet, now and then, in the class, he would turn in his quiet way upon some fellow who forgot the proprieties, as once, I fear at least, this particular student did. When in too free and easy position on the bench he was brought to time suddenly by the gracious, sweet professor, who said, "Mr. Foss, we are accustomed in this class to deal with parallelopipeds, but not with horizontalbipeds." Another name I must mention here among the most beloved names I have ever known outside the nearest circles of my own home and my father's home, the name of Albert S. Hunt, my tutor in rhetoric and in other studies of the last year of my course; my dear personal friend, my friend in the seminary before I came here, and my instructor there. I cannot speak as I would speak of him. He has gone on to the excellent glory; but I will say that if every college had a small number of men in its Faculty, with the genius for such wise, careful, spiritual influence, as he exercised over the young men whom he came to know and to love, you would have little concern about the higher criticism or the lower criticism, or anything else; for such teaching and such influence and such character will carry the knowledge of the Master as He lived

and suffered and died, and rose again, to human souls; as his influence did to mine. Yesterday as soon as I could get there, I went to the old South College and climbed up those new stone and iron steps to the old room on the left side near the second chimney; where on a certain evening in the month of March, 1852, words of that beloved friend, the like of which I had heard from his lips many times through the two college years preceding, were the means of leading me then and there to such personal knowledge of the Lord Jesus Christ as I have never lost; and I now thank God for those words from his saintly and now sainted lips, spoken fifty-four years ago.

Dear Old Faculty; God bless their memory. In respect to personal character and in respect to learning and culture, considering the differences of the times, they stand in worthy comparison with the best educated Faculties of that time in any College, and of this time in any College. I honor their memory, and am deeply grateful for such influences as came to me in the Wesleyan University in my happy youth.

THE TOAST-MASTER:

Our next toast is in the time-honored phrase "Town and Gown." This term "Gown," in the early history of Wesleyan, had, I take it, merely a metaphorical or symbolic significance. It is true, indeed, that the President on Commencement Day was used to appear disguised in that mediæval attire; but none of the Faculty ventured such compliance with monkish convention; while as to the undergraduates, I have heard their academic costume not very inaccurately described as "a shawl in winter and a linen duster in summer." But as, with the passing of the years, Wesleyan has begun to take on something of the venerable mood of age, the Faculty, one after another, have consented to assume garments of "staid wisdom's hue," and now pass in procession, as Milton hath it,

"All in robes of darkest grain,
Flowing with majestic train."

And the same stately envelopment of the Senior on Commencement day gives to his oracular utterances—when we let him utter 'em—that air of old experience that

"doth attain
To something like prophetic strain."

NATHAN BANGS

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In later years, indeed, a certain small section of the undergraduates have persisted in wearing gowns every day in the year—of a different color and cut.

I do not know how the gentleman who is to respond to this toast will interpret it. I have thought it probable he might say something of the relation between our cloistered, academic life and that wider world of politics and law of which he is himself so honored a representative. In the early years, our Wesleyan fathers seem to have thought the world more in need of the gospel than of the law; but within the past twenty-five years many of our alumni have entered the legal profession, and a goodly number, like the honored gentleman who is to respond to this toast, have risen to eminence at the bar and on the bench. We are proud to believe that we may say of all of them, as of him, that they have done nothing to debase the honor of the advocate or soil the ermine of the judge.

It is a trivial matter, but as I introduce this worthy and upright judge I am reminded of the old proverb, "Let me make the songs of a nation and I care not who makes its laws." I don't know that Judge Sutherland is the author or the hero—exactly—of any song; yet however well-known his judicial decisions may come to be, I suspect that by many here his name will be remembered best as standing in that famous snatch of rhythm, that bit of musical libel, in which a worthy officer of Wesleyan is traduced as

> "The man that cussed, the man that swore,
> The man that kicked in Sutherland's door."

I introduce to you, as a man who since then has shown remarkable ability in opening all doors that lead to honorable and deserved success, Hon. Arthur E. Sutherland, of the Class of '85, Judge of the Supreme Court of the State of New York.

JUDGE ARTHUR EUGENE SUTHERLAND.

Town and Gown.

MR. TOAST-MASTER: An acquaintance of mine compared one of the political parties, which one of course I will not say, to alcohol, because it kills everything living and preserves everything dead. And however unjust such a judgement may have been, the college which expended its energies in

teaching the dead languages and unchangeable mathematics used to be looked upon by many as not the best place to equip a man for the actual affairs of life. You will remember that Mr. Huxley criticised with severity the training which the young men of his time were receiving in the great universities in England, and insisted that the laws of nature which were supposed to be taught should be recognized as including not only things and their forces but men and their ways. But the laws of nature as now taught in the modern college do include not only things and their forces but men and their ways; and such is the life and work of the college of to-day that its graduates are believed by men in active business to be the best equipped of all men to enter into the constructive work of the world.

Wesleyan men congratulate each other upon the intimate relation between the life of this college and affairs outside. Our young men who have won honors for Wesleyan in the intercollegiate debates have dealt with questions of present moment and supreme importance; the very questions which are moving the world:—and they have discussed these questions with superior skill and insight. I recall with pleasure the fact that at the graduation exercises one year ago the two young men who had taken the highest rank in their class chose as the subjects of their orations themes which indicated that their college life had not been monastic, but that their interest and sympathies had been directed toward the men of to-day and their ways. One spoke upon the life and work of a great labor leader, and the other upon the importance of extending the law affording protection to employees in the industrial establishments and upon the railways of the country. These are interesting signs of the times: and so the Town and Gown, and the old distinctions of days when the dons and the preceptors governed the men in the college who were exempt from ordinary relations and responsibilities, have gone by, and the college of to-day partakes of and contributes to the throbbing life of the world.

Success in life is determined not alone by what we know, but surely as much by what we are: and highest of all the opportunities which are found in the smaller New England colleges of to-day we must place the associations which the undergraduate may enjoy with the men of the Faculty such as we have here to-day.

You remember Hawthorne's story of The Great Stone Face. Upon the side of a mountain outlined against the sky the rocks had been thrown together in such a position that from the valley they resembled the features of a human countenance, and a face was there to be seen perfect in its outline and noble in dignity, and the tradition was that some time a child would be born in that valley who would grow up to look like the great stone face and who would be the noblest personage of his time. And one day back to that valley returned a man who had gone forth in his youth and had made a great fortune, and the people said at first, "This must be he for whom we have been looking;" but he had the face of the miser. Then a general came back who had won great victories, and they said, "This may be the one that is to come;" but he was not the one: and a poet came, and listening to his verse they said, "Perhaps he is the one that is to look like the great stone face;" but no, it was the boy that stayed there in the valley and looked upon that face day by day, and longed to be like it; it was he who grew up to be noble and strong and majestic like the face upon the mountain side; and when age came upon him the people of the valley all said with one voice, "Behold, this is he who was to appear."

And so the young men that are here to-day and those that are to come, not only seeing day by day their instructors, learned men of broad sympathies, of high purpose, of noble character, but living in close association with them, partaking of their thought,—these younger men growing into the likeness of their exemplars shall go forth equipped not only with learning but possessed of character to take up the duties of life and to win the laurels of well-doing.

THE TOAST-MASTER:

An Englishman travelling by rail the other day through the state of Pennsylvania, found the car growing very dark, and as the gloom seemed to continue a good while, he asked his neighbor, "Will you tell me, sir, what is this long tunnel we are passing through?" "Tunnel!" was the reply, "this ain't no tunnel; this is Pittsburg." But there are some very brilliant things in Pittsburg; and it was only three days ago I was told in a letter from a resident of that city, that the most brilliant preacher there was Dr. Daniel Dorchester.

I believe some of our alumni have been a little restive because now and then a remote and ignorant rustic would speak of Wesleyan University as a theological institution—in spite of the vigorous efforts of the athletic teams to dispel that illusion. But I, for one, hope the day is far distant when Wesleyan shall not send out every year some able men to enter the Christian ministry. For, when all is said, it is still true that theology is the *scientia scientiarum,* inviting and taxing the best thought of the world. And it is still true that, at the present moment, the one place where the power of the orator has not declined or diminished is the pulpit. The one profession to-day calls for the union of the deepest thought with the most persuasive power of speech, for the noblest service to mankind, is the Christian ministry.

I call upon the Rev. Daniel Dorchester, Jr., of the Class of '74, to respond to the toast, "Wesleyan in the Church."

REV. DANIEL DORCHESTER, JR.

Wesleyan in the Church.

MR. TOAST-MASTER: Pittsburg, as has been suggested, is a very smoky place, but we do sometimes see the stars there, and furthermore, we manufacture the telescopes and the spectroscopes to enable others to see and study the heavenly bodies. We are ever looking toward the light as people passing through a tunnel always do, and this leads us to look fondly to the land whose chief products are men and schools.

During the last thirty years, I have felt very much like those who have visited the island of Mauritius. Among the flowers there is one of such rare and delicate perfume that when once breathed it is never forgotten. No matter how far the traveller may roam or through what exciting scenes, the memory of that flower haunts him and always impels him to revisit the island and breathe again that delicious fragrance.

Now Wesleyan has for us something of the charm of that flower. We have all been busy men, we have travelled far and wide, our minds and hearts have gone out to other objects, but the sweet, tender memory of our college years has gone with us and now brings us again to these dear scenes. Every flower is that part of the plant's form which is developed in the moment of its intensest life, and this inner rapture is marked externally

by some one or more of the primary colors. Sometimes this life is put into the outer sheath, and then it becomes white and pure, full of strength and grace. Sometimes it is put in the young leaves under the blossom and they become scarlet or purple. And sometimes it is put into the stalks of the flower and they flush blue. But in every case the presence of its strongest life is asserted by characters in which we take pleasure and which give assurance of having been produced by a Spirit of the same kind as our own.

As we look around on this brilliant company to-day and think of that larger company of distinguished graduates, both living and dead, we behold the flowering of Wesleyan's intenser life and the primary colors of noble character in the various professions and vocations.

It devolves upon me to speak of this intenser life of Wesleyan in the church. This life is so uniform, it is so all pervasive, it has touched with so much power and beauty those in humble appointments as well as those in the Episcopacy and the various official positions, that it seems almost invidious for me to make special mention of any one. It is one life, one character, one purpose.

We are glad, however, to honor among Bishops, Clark, the able author and organizer; Baker, judicial and wise; Erastus and Gilbert Haven, the brilliant editors and preachers; Foss and Ninde, eminent as pastors and presidents; Warren, always the gentleman and orator; Mallalieu, large hearted and fervent; Keener and Hendrix, conspicuous leaders in the church, South; and Burt, a successful organizer of Protestantism under the very shadow of the Vatican.

During the last quarter of a century, there has been no one whose voice has been heard more times in the General Conference, or who has done more to shape legislation than a son of Wesleyan. Every week in the Great Official he dispenses to a goodly portion of the church its meat in due season. It is strong meat, with an unmistakable flavor. It is no canned stuff, prepared in an Official Packing-house. There is sometimes more Mormonism than is appetizing and digestible, but every wise and well governed appetite selects only what is most nourishing in even a church paper.

Another editor, who does his own thinking and expresses his thought with real literary charm, is my classmate Gilbert. Little did I imagine when, in old South College, I used to run around with him on my shoulders, that he would ever attain his present aldermanic proportions and editorial dignity.

Methodism has no theological clearing house, although every preachers' meeting aspires at times to become one. The Methodist Review takes account of changes in religious thought and helps clarify and establish our standards. In that responsible editorial chair we are glad to see our cultured, urbane and discerning Kelley.

I do not like to poach upon the preserve of the next speaker, but I should like to speak of an eminent minister and educator, whose stalwart form and strong personality I ever associate with Wesleyan,—Joseph Cummings. Some of us fondly recall how helpful he was as a teacher. Northwestern owes him a great debt of gratitude for his wise leadership during one of the trying periods of her existence. There is another college President who was called from a successful pastorate to establish a university under the shadow of Harvard. While it is true of no one that he has taken all knowledge for his province, it may be said that the author of " Paradise Found " has made considerable progress in that direction. With Reed at Dickinson, with Welch in the heart of Ohio, with Harris at Northwestern and her other sons in so many schools and colleges, Wesleyan owns a goodly portion of this country educationally.

What a power Wesleyan has been in the pastorate! I shall not single out any one for purposes of special eulogy. Wesleyan has a score of ministers, who in the sublimity of their aims and the perfection of their spiritual striving are most deserving of honor. She has sent her sons into almost every Conference of this country, and into the far off mission fields, and they are there to-day making history and bringing strength and joy to many struggling souls. After all, what is great, what is small, in human life, and how superior to all of our distinctions are spiritual magnitudes!

Among the many characteristics of Wesleyan's contribution of intenser life to the church, I shall speak of but one. Wesleyan has always taught her sons to use their heads in religion as in everything else. They are not like St. Alban, whose statue is

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in an English church. There he stands amidst most pious surroundings with his superfluous head in his hands. Neither are they like the two deacons of whom Dr. James M. King told me. He went one Sunday afternoon to hear Dr. Hall preach. All through the sermon these two deacons were fast asleep. At the close of the service one said to the other, "That was a fine sermon the Doctor gave us to-day." "Yes," answered the other, "The Doctor always does well." We were never taught here to regard the "torpor of assurance" as a means of grace.

There are those who picture the higher criticism as a monster of frightful mien. But Wesleyan men as a rule have regarded it with calm, unquailing eyes. There is a story of a wag in a country town, who once made a wager that he would break up a circus and menagerie. Accordingly, when the rustic crowd had duly inspected the animals and were seated around the arena eagerly awaiting the entrance of the clown and the bareback riders, this wag rushed into the ring shouting: "Ladies and gentlemen; save yourselves, the Gyascutus has broke loose." A dreadful panic followed. The crowd surged out of the tent in hot haste and scattered in every direction. After awhile, noticing that there was nothing in pursuit, one turned around and said, "What is a Gyascutus anyway?" A similar wild cry has been heard in the church. "Higher criticism has broke loose. Save yourselves and the faith once delivered to the saints." But Wesleyan men have not been stampeded. They have done what Marcus Dods said the English people are doing. A timorous American once asked the Doctor what was being done to oppose the higher criticism. "Nothing," he answered. "We are going on saving souls."

One of Wesleyan's graduates has been under fire. It is a pity that one so scholarly, so pure and Christian as Professor Mitchell should have been the target of such low criticisms. It is a shame that he was not left free to pursue his researches when "the marks of the Lord Jesus are upon him." It is a poor sort of religion which is endangered by what any man may or may not say as to what did or did not happen in the "world before Abraham." We all have a great deal to learn in the matter of toleration. The larger the church grows, the more tolerant it must become in doubtful matters in order to preserve the

respect of men. Where there is no vision, no reaching forward to the truth to be revealed, the church sinks like lead.

Wesleyan has never encouraged a brilliant denial of sacred things. She realizes that the mind that denies and drifts, never finding any holding ground where it can anchor, soon loses the power to believe, and its finer energies die. But doubt that is living, that cries out for certainty, and will not rest until it finds it, is a servant of God, to bring truth into the soul.

In conclusion, let me say that Wesleyan has always been mindful of the fact that religion should be like the tree in the Garden of Eden,—"pleasant to the eye, good for food," and bearing the fruits of a large and genial humanity, as well as those of austere piety. The church should be what Edmund Burke declared society to be; "A partnership in all art, a partnership in all science and in every perfection."

Never more than on an occasion like this, when we are surrounded by the noble living and fondly recall the noble dead, when we behold the promise of enriched life in those who are to follow, never do we more fully realize that the church universal is a "partnership between those who are living, those who are dead, and those who are to be born." As I think of the church and Wesleyan going on unchanged amid all the changes, flourishing while the workers pass away, I am reminded of the words of a monk who was a guide to a famous painter when he visited the Escurial in Spain. They came at last to a glorious work,

> "Our Lord's last supper, beautiful as when first
> The appropriate picture, fresh from Titian's hand
> Graced the refectory; and there, while both
> Stood with eyes fixed upon that masterpiece,
> The hoary father in the stranger's ear
> Breathed out these words: Here daily do we sit
> Thanks given to God for daily bread, and here
> Pondering the mischiefs of these restless times
> And thinking of my brethren, dead, dispersed,
> Or changed and changing, I not seldom gaze
> Upon this solemn company, unmoved
> By shock of circumstance, or lapse of years,
> Until I cannot but believe that they,
> They are in truth the substance, we the shadows."

THE TOAST-MASTER:

Our next toast is "The Teaching Profession." If I mistake not, the conception of the teacher's profession has developed

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somewhat in recent years. The venerable tale of Mark Hopkins on the end of a log hardly expresses the present ideal of the teacher's requirements. To be sure, if the work of the teacher has gained in intension it has lost in extension. The professor of to-day is no longer the encyclopædic man of the past generation. Why, I myself—and I hope no one will venture to accuse me of being an old man—I myself have taught, and in Wesleyan University, rhetoric, logic, ethics, metaphysics, evidences, history, Greek and Browning. (Professor Van Vleck never would consent that I should teach mathematics.) But your modern teacher cannot be so broad a man as that.

And then, the teacher of to-day teaches some subjects the very names of which would scandalize our fathers. What do you suppose they would have said, for instance, of "Physiological Psychology"? I can imagine their alarmed sneer, "You might as well say 'corporeal spirituality.'" And I can imagine the look of puzzled indignation on the face of one of those old philosophers if he should be introduced to the psychological lecture-room and see there, instead of a bust of Plato and a shelf of goodly tomes, an array of glass jars filled with pickled human brains in various stages of sanity, and an elaborate mechanism for determining how far you move your eye-ball in reading a line of Walt Whitman's poetry, or how long it takes you to make up what you call your mind to take your hand off a red-hot stove. "And has divine philosophy," I hear him say, "come to this!"

And yet, I don't know. There are some difficulties in the opposite or introspective method. I was reading the other day in a recent book on the Will—I do sometimes unbend my mind over philosophy—and I came upon a statement that seemed to me interesting and impressive. It was this: "The Ego as Will, being undetermined is determined to be self-determined, through the undetermined." Now I guess that is true. The author said it was. And it had a certain fascination for me, a kind of poetic charm; not "musical as Apollo's lute" exactly, but with a haunting rhythm like it—

> "The Ego as Will,
> Being undetermined, is determined
> To be self-determined, through the undetermined."

And yet, I must say, that for the average mind it seems a little too purely abstract. I think, as Mr. Mill used to say, it ought

to be "clothed in circumstance" somehow, applied to à concrete case—say of a darkey and a watermelon. "The Ego as Will"—the darkey—"is determined to be self-determined, through the undetermined"—the watermelon. Probably it means something like that. My point is, that philosophic teaching can be too introspective and metaphysical, as well as too materialistic and mechanical.

Now my friend Professor Judd is, they tell me, an excellent teacher of this most difficult subject, Physiological Psychology. He really does know a number of things, too, outside his department; and inside his department, he knows all there is at present to be known, and—what is perhaps a yet higher compliment—he doesn't know anything that is not to be known. Professor Charles H. Judd, '94, of Yale University, will respond to the toast "The Teaching Profession."

PROFESSOR CHARLES HUBBARD JUDD.

The Teaching Profession.

MR. TOAST-MASTER: When I accepted your invitation to be present on this occasion and to represent those members of Wesleyan's alumni who are engaged in the profession of teaching, I did so with the thought clearly in mind that the teaching profession engages the services of more Wesleyan alumni than does any other profession. On turning to Professor Nicolson's authoritative volume on this matter, I found that according to the first page of statistics I was quite right. On the second page, however, Professor Nicolson had succeeded by a careful manipulation of the figures in showing that the clergy outnumber the members of the teaching profession. This he did by including certain persons of doubtful character in the list of the clergy,—persons who are members of conferences but have abandoned their ministerial work for what is in most cases a distinctly educational calling. In view of Professor Nicolson's methods of treating the facts, I feel justified myself in using other facts to establish the claim which I originally made for the greater importance of the teaching profession. As I examine the lists of Wesleyan classes, I find many of the names in the later classes repeating the names of the members of the earlier classes, and I am convinced that there is many a Wesleyan alumnus who is engaged in teaching though his name

does not figure in Professor Nicolson's table. Indeed, the universality of the teaching profession among Wesleyan men can be paralleled, I think, only by one period in the world's history. I remember that Professor Conn used to say to us in his class in biology, that there was a period in the world's history long ago when education was very much more universal than it is even now. "In that far off period all the members of the species," he would say, "were educated in the higher branches."

The universality of the profession of teaching does not, of course, make it impossible for some individuality to appear among the members of this profession. Indeed, there are evidences, as we examine the individuals among the Wesleyan alumni who are teachers, that they fulfill all of the requirements generally imposed by popular tradition upon this profession. There is the absent-minded man. We are told of one Wesleyan alumnus who, on a certain occasion, entered a street car and seeing a friend handed him the nickel and shook hands vigorously with the conductor. There are other members of our Wesleyan group who fulfill the requirements of the German definition of a professor as a "disputatious person who always holds an opinion opposite to that which was last expressed." But I shall make no mention of those who show these marked personal characteristics, nor is it my intention to deal in any general way with all of the difficulties in individual work or general administration that confront the teachers of Wesleyan.

That there are so many of us engaged in the teaching profession can, I think, be attributed directly to the fact that Wesleyan has always furnished in her Faculty examples that inspire the students while here and the alumni after their graduation to engage in the art of instruction. When we come back on these occasions, we are justified in setting aside some of the ordinary formalities of personal intercourse and in telling these men very frankly how large appreciation we have of the examples which they have given us. Some sixteen years ago my class came to college, and while, of course, the exact figures do not fit many of the rest of you, I am sure that the statement which I make for sixteen years ago will hold equally well for other periods. Wesleyan had at that time a very remarkable body of teachers. They were remarkable in many respects—remarkable as class instructors, as contributors to the world's science, and as progres-

sive organizers of university life. Through their clear visions we saw many of the great truths of philosophy, literature and science. We learned at their feet to appreciate the great things that men of all generations have written down in books, and we followed their steps amid the wonders of nature and life. We carried away not only intellectual inspirations but also the memory of the examples of devotion to public service, which made it extremely easy for Wesleyan alumni of that period, as of every other period, to enter upon the profession whose primary function is the improvement of others and the cultivation of general scientific knowledge. This seems to me to furnish in a very large number of cases a complete explanation of the devotion of Wesleyan men to the profession of teaching.

And now there are two special matters to which I wish to make reference. First, let me bring back to your attention the fact that the teaching profession is rapidly becoming a specialized calling requiring specific preparation, and I find to my regret that Wesleyan is doing relatively very little for the cultivation of the specialized scientific preparation for school work. It is no longer possible in this country, and it has long been impossible in the older countries of Europe, for anyone to engage in elementary and secondary school teaching without some knowledge of the history of educational institutions and of the methods of instruction in elementary and secondary school subjects. I see no reason why a college should not offer such courses as these when it can be definitely shown that a large body of the graduates of the institution are to enter upon the profession for which these subjects are the special preparation. If sufficient preparation is not provided, students will nevertheless take up teaching and they will find it necessary to spend a period of years in experiment and wasteful dissipation of their energies, gaining a kind of preparation which might have been anticipated, at least in part, by a thorough knowledge of the institutions of other peoples and the practices of their educators. There is no reason why such educational work should not be undertaken by the Wesleyan Faculty without any large additional demand upon the professional or material resources of the college.

There is another matter which it is appropriate for us to discuss in this presence where the alumni and the governing board of the University are met together. That matter is the compensation of

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the members of the Wesleyan Faculty. You cannot leave the professional salaries in this institution in the condition in which they now stand and continue to secure the services of such men as have always served Wesleyan. I think we are all convinced of the truth of this statement. The difficulty is in making any movement to change the situation. We appreciate the work of the members of the Wesleyan Faculty, but appreciation is not the substantial kind of pay which makes it possible for them to go on with their work. The matter of instructors' salaries is, of course, a question with which other institutions than Wesleyan have also had to deal. Some of these institutions have been fortunate in adding to the compensation given to their instructors the promise of a pension in old age. I do not wish to inject into this discussion any radical suggestions or to appear to advocate a scramble for the spoils, if such they are to be called, of the rich endowment which has been given to certain American institutions for the pensioning of their teachers. It is not for me to decide whether this institution is to continue to debar its teachers from enjoyment of this general fund by an adherence to its denominational affiliations. Of one thing, however, I am certain,—if a change is not made of such a character as to provide for the participation of Wesleyan's teachers in the general fund, we are under obligation to see to it that a special fund is provided at Wesleyan that will accomplish the same result. And the matter of pensions is by no means the only matter that needs immediate consideration. Wesleyan is in competition with a great number of other institutions, some of which are competing educational institutions, some of which are practical institutions needing the services of professionally trained men. In order to maintain a proper standard in the face of this competition it will certainly be necessary for Wesleyan to be prepared to make higher bids for the services of first rate men.

These two points, then, seem to me to represent the most urgent needs of Wesleyan's teaching profession. First, there is a demand for more specific preparation of those graduates who are to serve the community and the state in the profession of teaching outside the institution and, second, there is an urgent demand for the better compensation of those who teach within her walls. If these two lines of consideration can be seriously impressed upon those who have the government of the institution in hand, I feel that much can be accomplished to the advantage of that large body

of alumni whom I have the honor to represent, that body of men and women who are members at once of Wesleyan's alumni and of the teaching profession.

THE TOAST-MASTER:

Our speakers thus far this afternoon have all been alumni of Wesleyan. But there are others. The gentleman who is to respond to the last toast is not an alumnus of Wesleyan—not quite. Our Alma Mater, however, is in—but, as the novelists say, Let me not anticipate. I may venture to make reference to him under a veil of decent Latin as an *alumnus cras naturus*.

My friend Professor Stuart is a paradox. He is a theological professor; and yet he is a poet and a musician—I have heard him sing. He is a Scotchman; but he is a man of wit and humor. He unites in his own person all the courtliness, the charm, the seductive grace of the royal family whose name he bears, without any of their weaknesses. In fact, just imagine the last royal Charles Stuart, who "never said a foolish thing and never did a wise one," returned to earth again, repentant now of all his follies, and as wise in heart and deed as witty, in short changed into the right sort of a Methodist—and you have him here before you in this later and better Charles Stuart. He would naturally choose, as the subject of his toast, the title of that famous book by the great and good prelate whom in his lifetime he treated so shabbily. We shall be glad to hear what he has to say now about Jeremy Taylor's Liberty of Prophesying—or anybody else's. I introduce Professor Charles M. Stuart, of the Garrett Biblical Institute, who will respond to the toast, "The Liberty of Prophesying."

PROFESSOR CHARLES MACAULAY STUART.

The Liberty of Prophesying.

MR. TOAST-MASTER, LADIES AND GENTLEMEN: When Professor Winchester sent me the invitation to speak at this banquet, I wrote and asked him if it were expected that I should say something sensible. To which he replied, "Oh no, the committee have engaged me for that; what we want of you is to be funny." And yet he himself has told you that I am a

Scotchman, of that sober and unyielding race which, so it has been said, get a joke into their system as the result of a surgical operation. I recall that it was said of one of my compatriots that after a lecture by Artemus Ward he made occasion to say to the lecturer: "You are an extraordinarily funny man. There were two or three times to-night that I came very near laughing at ye." If I am not permitted to be sensible, and if I cannot be funny, it only remains for me to be theological. Hence my topic, "The Liberty of Prophesying." And I desire to say in advance that I propose to take a great deal of liberty in my prophesying. It has had a beginning; it can not very well escape a middle; and I hope for an ending; but the relation of these to each other you may not see; indeed it is an open question whether any relation is intended. But for such liberty I have good precedent. When Rowland Hill was preaching in Scotland, he was told by some of his hearers that they had a great objection to his kind of sermons because there were no clear divisions in them. Whereupon on the Sunday following, he said, "My friends, I propose to treat my text in three distinct divisions. First, I will go around about my text; secondly, in all likelihood, I will go away from my text; and thirdly, it is very unlikely that I shall ever return to it." The "liberty of prophesying" suggests some considerations touching my own calling. I took up a paper the other day and found one of your most distinguished New England college presidents quoted as saying, "The modern (theological) seminary, with its atmosphere of docile unreality, turns out a class of ministers who can comfort a few sisters weaker than themselves and that is all." Well, it is something,—not much to be sure, but something, to comfort the weak sisters; especially if, as is generally the case, the weak sisters are of both sexes, and have just weakness in common. The self-reliant Apostle to the Gentiles was not above adjuring those that were strong to bear the infirmities of the weak, reminding them that in such helpfulness they were fulfilling the law of Christ. In the battle of life the strong are not always mindful of their privilege, and surely it is a saving element in society to have in the church a class who have this as a special commission. To continue my quotation: This authority declares that "the man who has graduated from a college or seminary of the traditional type is useless and juiceless; he is dead the day he graduates." I was very much struck with the collocation of terms,—"useless

and juiceless." Perhaps the collocation is not at all fortuitous—it may be vital. A seminary which is useless can attract only "jays," and "useless" plus the "jay" added by attraction gives juiceless. More than this, if he is dead the day he graduates, we have this interesting problem before us. Dr. Rice, on Sunday night in that fine address of his, said that Wesleyan University became a modern school in 1873. From this it follows that every minister graduated from this school before 1873 was dead the day he graduated. There are some such here, and you are dead, but you don't know it, and you have been dead all these years, and have been walking around to save the expenses of your funeral. Well, you cannot look dead, and you cannot be blamed for that, but you might look mortified.

Seriously, the difficulty is here. It is never a question of the seminary at all. In schools and training, it is always a question of the man. If a seminary receives a live man, it will turn him out more alive; if it receives a dead man it is not to be blamed if it turns out a deader one. All the reformers were graduates of schools of the traditional type, Luther was a graduate of the theological seminary of the traditional type, and if you ask who are the men who have made the most lasting impression on American society and American civilization, you can name three outstanding figures,—Jonathan Edwards, Henry Ward Beecher, and Horace Bushnell, every one of them a graduate of the school of the traditional type. So you see, it is not so much a question of the material the seminary turns out as it is a question of the material which the seminary receives.

But what is the ground of objection to this traditional type? I will quote again; "Dead languages, the deadest of the dead, are the spinal column of the course. The student must be taught the exact words in which the miraculous and final revelation was deposited."

I do not quite like the tone in which that last is said. There is just the hint of a sneer in regard to "the miraculous and final revelation." Out Chicago way we are disposed to regard the Bible as "the miraculous and final revelation." To be sure, we have Mrs. Eddy,—though that I must qualify,—we have only long distance connection with her. And you know it takes $4.75 to buy a copy of that invaluable book through which we receive the Mary Baker Eddyfication to our souls.

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It is quite true also that we have Dowie; but Dowieism is hardly a revelation. We might call it a sort of empirical speculation,—empirical in that Dowie experiments on every man he can lay his hands on; speculation in that Dowie finds out what a man is worth and then strikes him for a dollar less. Dowie assumes the rôle of Elijah for the "profit" there is in it.

I am getting away from my subject a little. You remember the other part of the criticism was about the dead languages, and I want to say a word about that. My distinguished predecessor on the program had something to say about the dead languages; I would like to have a word about them also. Why are they dead? Of course, the old witticism is, because they have been overstudied, studied to death. No, they are dead because they are not now spoken by the man who has not studied them. In which case we can prove from the average Freshman that English is a dead language. I think we ought to get a modification of that phrase. There can never be a dead language in which a living literature is embodied. And if the theological student, if the preacher is to be the interpreter of a literature, then he certainly ought to know something of the languages in which that literature has come down to us. It is in virtue of this very desirable accomplishment that I am going to take the liberty of saying also that it might not be a bad thing if we could get all our people not only to go to church but also to study Hebrew and Greek. A very intelligent layman happened to drop into church one Sunday morning, and he came home and said to his wife. "I think I shall go to church always on Sunday. You are always getting some new ideas there. I went to church this morning and the preacher was telling about Sodom and Gomorrah and referred to them as cities by the Dead Sea. Do you know," he added "I had always thought of them as man and wife." A popular interest in the languages of the Bible would, at least, give a new relish for the study of its literature and promote a desirable intelligence about its surface contents.

And now just one other word as to the criticism of this scholar concerning the theological seminary. He says the reason why manly men do not come into the church, into the ministry, is because "we cannot get any creed adjusted to the modern way of thinking." It seems to me that this is reversing the proper order of things. We ought to be concerned not so much with a creed

to fit the man or to save him, but with getting the man to justify a creed, any creed. This is the difficulty. Almost any sort of a creed will do service if only there is a man presenting it. Luther and Calvin had narrow creeds upon which they built their lives. I have not the slightest particle of sympathy with Calvinism, but there are worse things in this world than a narrow creed and a passion for righteousness. So far as I know them the theological seminaries are looking for men to justify the creed and we let the creed very largely take care of itself.

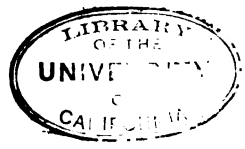
It is also said that these young men are not coming in because they find the church is restricting them in the matter of their intellectual freedom. Just recall to your minds the stories which Dr. Dorchester and Bishop Foss recited to you to-day. Do you mean to tell me that Stephen Olin ever failed to bring to the church the thing he believed,—or that Willbur Fisk did, or that Bishop Foss did, or that Bishop Andrews did? You know better than that. One of the strongest and one of the ablest liberalists of the modern school, and one of your own professors here, Professor William North Rice,—did he feel himself restricted in writing his book on religious aspects of science? You know better. It is quite true, we have had some heresy trials. They, however, have been few. And if you investigate these heresy trials, you will find that there is always something back of the teaching involved. It is not always or altogether a question of the teaching, sometimes it is a question of the man or of his method.

But suppose it to be true that the church is engaged in this work of restricting the intellectual freedom of the modern man. Is there any more glorious warfare to which a young man can be called than this battling for intellectual liberty? Where can he do it to better advantage than in the church? I am glad to be able to say these words to this company; it is to this you are called. Suppose we had a church here in which men were the preponderating element, trained men, thoughtful men. Suppose they found their pastor fighting a good fight for intellectual and religious freedom. What influence would it have upon the presiding elder and the Bishop if these men were lined up and said, "You keep your hands off our man!" It would practically settle the whole question. That is a work to which young men of to-day

are called. A more glorious work, a more glorious calling will never be opened to them; and I know that Wesleyan, true to her traditions of the past, will never be disloyal to such a call, for

> He never learned to shun a fight
> Nor on a good cause turn his back;
> He stands by till the fight is won,
> Whose heart thrills to the Red and Black.

TUESDAY EVENING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MARTIN AUGUSTINE KNAPP

ADDRESS

By Martin Augustine Knapp

Transportation and Combination

Mr. President Rice, Members of the Phi Beta Kappa Society, Ladies and Gentlemen:

TO take so prominent a place in the exercises which celebrate this notable anniversary is at once an honor far beyond my desert and a task to which I am altogether unequal. It is an event of rare and peculiar interest, filled with memories which excite our affectionate pride and signally prophetic of the enlarging career and increasing beneficence of the University in the years to come. And if ever I coveted the gift of befitting speech it is surely at this moment and in this presence that I might be fortunate enough to utter some word worthy of the dignity and significance of this occasion.

We are so constituted that each of us looks at the problems of life from a somewhat different standpoint. The opinions we form, the principles we uphold, the policies we advocate, are all influenced more or less by the work in which we engage and the kindred range of our reflections. It is natural, therefore, that I should find the origin of present-day questions in the facts of modern transportation and communication, facts that have transformed the world since this institution was founded, and that I should entertain views, perhaps indulge in fancies, which those facts suggest.

The primitive man traveled on foot and moved his scanty belongings by carrying them in his arms or on his back. Even the rude vehicles and water-craft which he eventually learned to construct were propelled by his own muscle, and we can only guess how long it was before he obtained any other motive power for the transfer of his person or his property. In every way his life was meagre and isolated, for he had not acquired the art of writing, and intercourse with his fellows was confined to the

simplest speech. Outside the family to which he belonged, or the tribe with which he gathered, he had no community of interest, felt no friendship and desired no alliance. His associations and his activities were as limited as his means of conveyance.

In a later but still very remote period there came a great increase of motive power by the subjugation of animals, and their employment for transportation on land, and by the use of sails and rudders which multiplied many times the efficiency of water carriage. When these two results were secured, man had added to his own bodily powers the superior strength of beasts of burden and the enormous energy derived from the winds of Heaven. This was an immense advance and marked the beginning of that wonderful civilization which slowly followed. The animal kingdom was brought into service for the various functions of land distribution, and the ship which could be sailed and guided made every water-way subservient to man's requirements. Sometime in this period also he learned to express his ideas by symbols or written words, and thus was enabled to transmit his thoughts by the same agencies that transported his possessions.

This leads to a fact of history which seems to me not merely significant but profoundly impressive. With the subjection of animals and the use of wind-propelled vessels, both of which achievements reached a high degree of perfection in the unknown past, the means of transportation, broadly speaking, remained unchanged and unaugmented until almost down to the present time. Long before other agencies of conveyance were dreamed of, while ox and horse, oar and sail, were the only means of transport, the race had occupied most of the habitable globe and reached high levels of national greatness. Strong governments were established, vast populations engaged in varied pursuits, and opulent cities crowded with every luxury. The institutions of society had acquired strength and permanence, the arts of leisure and refinement had approached the limits of perfection, and inductive science had laid firm grasp on the secrets of nature. Great inventions and discoveries had widened the fields of activity, and furnished the means and incentive for multiplied vocations. In a word, there was the developed and splendid civilization of only little more than threescore years ago before any new or different motive power was practically utilized for production or distribution.

And the suggestive thought to me is that this immense and complex organism, with all its accumulations of wealth and wisdom, its diversified employments, its agriculture, manufactures, business affairs, financial systems, commercial and political relations, civil and social order—its very life of potency—was not only fitted to but dependent upon means of transportation which, as respects their expense, their speed and their capacity, had not essentially altered since the earliest tribes began to barter! Enormous growth of enterprise and enlightenment, continued progress in every other sphere of human effort, with *motive power,* which lies at the foundation of every activity, remaining from first to last a constant quantity! Before the earliest recorded transaction—when Abraham purchased the field of Ephron and paid for it his "400 shekels of silver current with the merchant"—the horse and the ox were the established agencies of land distribution; and what better agencies, I beg to remind you, became available at any time thereafter until well along in the nineteenth century? Yet the ox was as strong and the horse as fleet, and their powers were as effectively employed, in the days of the Pharaohs as they are at the present time. No history is so ancient as not to disclose the general use of animals for the purposes of carriage, while the vehicles to which they were harnessed had then been developed, in convenience and usefulness, to a degree not much exceeded in any subsequent period. Though differing considerably in appearance from the wagons with which we are familiar, yet they were constructed upon the same principles and performed the same functions as those now employed.

Similar progress was made in ship-building and seamanship as far back as history affords proof or tradition. There were oar and sail, tides and currents, and the inconstant winds, long before the ships of the Phoenicians brought back from the east the gold of Ophir; and what more was there than oar and sail, winds and currents—for all the purposes of navigation—until, almost within the memory of men yet living, the little steamboat of Robert Fulton ascended the Hudson River! In this long span of time, it is true, bridges were built, highways improved, vehicles better fashioned, sailing craft increased somewhat in size, and the mariner's compass led to longer voyages; but, nevertheless, the forces by which movement is effected, the

actual means of distribution on land and sea, continued without substantial change in character or efficiency age after age and century after century, until the recent—the very recent—era of steam locomotion.

To my mind, it is a matter of fascinating import that the long procession of the world's advancement down to the century just ended was conditioned by and dependent upon agencies of transport which were themselves essentially unprogressive and incapable of important betterment. True, there were minor modifications from time to time in the line of mechanical adjustment, but the general methods employed, *and the results obtained,* showed no marked improvement or material alteration from those applied in the earliest history of commerce. Reduced to the forms in ordinary use there were, at the last as at the first, the beast of burden on land and the oar and sail on water. Yet thus hampered and restricted in the means of distribution, which is the measure of all commercial effort, there was built up in the long process of years the varied and advanced civilization which the last century inherited.

Then all at once, as it were, into and through this social and industrial structure, so highly organized, so complex in character, so vast in its ramifications, yet so adjusted and adapted to the fixed limitations of animal power, was thrust the new mode of conveyance by mechanical force, the sudden wonder of transportation by steam. The advent of this new and marvelous agency was the greatest and most transforming event in the industrial history of mankind. It wrought an immediate and radical change in the elemental need of society, the means of distribution. The primary function was altered both in essence and relations. The conditions of commercial intercourse were abruptly and fundamentally altered, and a veritable new world of energy and opportunity invited the conquest of the race.

No other triumph over the forces of nature compares with this in its influence upon human environment. It has directly and powerfully affected the direction and volume of commercial currents, the location and movements of population, the occupations and pursuits in which the masses of men are engaged, the division of labor, the conditions under which wealth is accumulated, the social and industrial habits of the world, all the surroundings and characteristics of the associated life of to-day.

The world has seen no change at once so sudden and so full of great results.

The next fact to be noted is hardly less remarkable. Not only are the new methods of transportation incomparably superior in speed, cheapness and capacity, but, unlike those which have been supplanted, these new methods are themselves capable of indefinite increase and expansion. The maximum efficiency of an animal is so well known as to amount to a constant quantity, and this unit of power is virtually unchangeable. Substantially the same thing is true of a vessel of given dimensions and given spread of canvas. For this reason distribution remained, as I have said, the one fixed and inflexible element to which all other activities however elastic and progressive were necessarily adjusted and by which they were limited.

Now a special and most suggestive feature of transportation by steam, electricity and other kinds of mechanical force, is that its capacity is not only unmeasured and unknown but will doubtless prove to be practically inexhaustible. That is to say, no certain limits can be assigned to the operation or effect of these new agencies as compared with those which have been superceded. Therefore, speed may reach many times the rate now attained, the size of vehicles may be greatly increased and the cost of carriage for the longest distances reduced to an astonishing minimum; so that as progress goes on in developing the means and methods of distribution, the habits and needs of men will be more and more modified, with consequences to social order and the general conditions of life which may be far greater than have yet been imagined.

But this is not all. Another fact is still more wonderful. Coincident with this sudden transfer from animal power to steam have come the new and amazing means of transmitting intelligence. In a brief span of years the barriers of time and distance, hitherto so formidable, have been swept away by telegraph and telephone. No longer limited to the agencies by which material things are transported, we send our thought and speech with lightning swiftness to the four quarters of the globe, and hold all lands and peoples within the sphere of instant intercourse. So recent is this miracle that we are still dazzled by its marvels without realizing its tremendous import.

That this substitution of steam and electricity as the instru-

ments of commerce and communication has been an immeasurable gain is witnessed here and everywhere by half a century of unparalleled progress. Along these wondrous pathways the world has literally leaped. Released from dependence on beasts of burden, the entire realm of industry has been quickened and enlarged; productive energy has been vivified by new and limitless means of distribution; the products of the whole earth are embraced in wide circles of exchange; all the luxuries of all lands are brought to every household; wealth has multiplied until we are surfeited with its abundance, when other people possess it; the genius of invention has been stimulated to larger exercise, the sphere of thought grandly extended, the impulses of charity awakened to nobler activity, while keener sympathy through closer contact is opening the way to world-wide brotherhood.

I dwell upon these facts of familiar knowledge because they make up the conditions of modern life and underlie the difficulties which now press for solution. These manifold benefits have not been secured without many and serious evils. So radical a change in the methods of distribution, and consequently of production, was sure to be attended with peril as well as beneficence and to entail a series of results immense and far reaching.

When movement was measured by the strength and endurance of animals, only a limited area could be reached from a common center. Its slowness and expense confined all inland distribution within narrow bounds. Only eighty years ago it took a week to send a letter, and cost $125 to move a ton of freight, from Philadelphia to Pittsburg; and the average price for carrying the necessaries of life was not less than twenty cents a ton for each mile of distance. On such a basis most commodities were shut off from distant markets, and farm products, for example, would seldom permit of conveyance more than 100 or at most 150 miles. Only such articles as were of small bulk and weight compared with their value were moved to any considerable distance from the place of production. For this reason the requirements of an ordinary family were almost wholly supplied from nearby sources. And this means—without amplifying the statement—that productive energy, for the most part, was restricted by the consuming capacity of the surrounding neighborhood. The forces outside each little circle were but feebly felt and had

slight influence upon its separate affairs. Broadly speaking, the business of each locality was adjusted to its own conditions and was practically undisturbed by like operations in other places. What we call competition was held in check by slow and costly means of conveyance; its effects were moderate and limited, its friction seldom severe.

But the use of steam for motive power and electricity for sending news increased enormously the range of accessible markets, and at once intensified competition by the celerity and cheapness of distribution. Industrial strife has already become world-wide in extent and distance an ineffectual barrier against its destructive assaults. For distance as a business factor is not at all a matter of miles, it is merely a question of time and money. The commercial effect of cheap conveyance and quick communication is to bring remote places closer together. For all the practical needs or enjoyments of life Manila is nearer Middletown now than Montreal was a century ago; and the whole continent could be as easily governed from Washington to-day as could the twenty-four states which comprised our Union in 1831 when this institution was founded.

Our grandparents got their supplies mainly in the neighborhood where they resided, and only a few persons were concerned in their production. To-day it may safely be said that five millions of people and five hundred millions of capital are directly or indirectly employed in furnishing a family dinner. When merchandise of every description is moved by the ton at great speed from one end of the land to the other, and at an average cost of less than three-quarters of a cent a mile, as is now the case, the expense of transport is but a trifling impediment to the widest distribution.

Nor should we forget that it was the opening up of new and ever enlarging markets, by the cheapness of steam transportation, which gave the first opportunity for the extensive use of machinery; and this in turn quadrupled the capacity of labor and greatly reduced the cost of large scale production. By this revolution in the methods of manufacture—caused by the railroad and steamship—the mechanic was supplanted by the operative, and the skilled and independent craftsman of former days found his occupation gone. For what chance now have hand-made articles when the factory-made product is carried across the

continent at nominal cost? But the factory without the railroad would be only a toy shop. If its wares had to be hauled over country roads by mules and horses, the points they could reach would be few and near-by, and thus contracted sales would limit the size of the plant and the volume of its business. It is simply because transportation is now so speedy, so cheap and so abundant that great establishments have become profitable and driven their smaller rivals from the field.

These facts—which might be multiplied without limit—bear directly, as I think, and with a force not fully perceived, upon the whole problem of industrial competition. The argument runs this way: As the means by which industrial products are distributed become more convenient, quicker in action and less expensive, the area of distribution rapidly enlarges, and as the area of distribution enlarges the competition of industrial forces increases in something like geometrical ratio. The movement of property by rail in the United States alone already exceeds four millions of tons every twenty-four hours. Think of the rivalry of products, the strife of labor, the strain and struggle of trade, which such a movement implies. With the constant acceleration of that movement, which is certain to happen, how long can the friction be endured? How soon will it become unbearable?

The truth is that new conditions have arisen and new methods must be adopted. All the pressure of modern life impels to the coördination of effort. We see that discord and antagonism, to say nothing of their moral bearing, have far less efficiency than harmony and coöperation. The world is searching for economies. It is intolerant of needless expense. The way a thing can be done the easiest and cheapest is the way it is bound to be done and the way it ought to be done. We want the best results and find that they come from combination. The old aphorism, "in union there is strength," takes on a new meaning. It is the law of growth and increase. It applies to industries as well as to individuals. To unite is to advance. The concentration of process is the expansion of output.

Thus the potent agencies by which distribution is now so rapidly and so cheaply effected, which so combine and intensify the forces of production, are fast altering the conditions and changing the character of industrial development. And the end is not yet; it outruns imagination. What will be the ultimate

effect of these methods of conveyance and intercourse when brought to higher perfection and employed with still greater efficiency? When these agencies of commerce are increased in number and capacity, as they will be; when cost is still further and greatly reduced, as it will be; when speed is doubled, as it will be, and quadrupled, as it may be; when the whole United States shall have reached the density of population now existing in Great Britain, how can industrial competition possibly survive?

When Adam Smith wrote "The Wealth of Nations," it took two weeks to haul a wagon-load of goods from London to Edinburgh, and such a thing as a business or industrial corporation was virtually unknown. To-day the great enterprises of the world are in the hands of corporations, and the time is fast approaching when they will absorb all important undertakings. Why? Simply because the railroad and the steamship—cheap and rapid transportation, all the while growing cheaper and quicker—ever widening the area of profitable distribution, furnish the opportunity, otherwise lacking, for the employment of larger and still larger capital. This opportunity permits and encourages the concentration of financial resources; so that, within limits not yet ascertained, the larger the business the greater its possibilities of gain. But the legitimate, the inevitable offspring of corporations is monopoly. Why? Simply because the operation of these massive forces—reaching and contesting in every market of the world—begets an extremity of mutual danger which always invites and often compels a common agreement as to prices and productions; that is, a trust. Just as the implements of warfare may become so devastating in their effects that nations will be forced to live in amity, so the destructiveness and exhaustion of commercial strife in these larger spheres of action will make combination a necessity.

So, in the measureless and transforming effects of modern transportation, and the ends to which it resistlessly tends, I find the principal cause of the economic revolution upon which we have entered. The incoming of these new and unfettered forces not only changed the basic function of society but greatly disturbed its industrial order. In the effort to restore a working equilibrium strange questions arise and novel difficulties are encountered. Already we are compelled to doubt the infallibility of many inherited precepts and to reopen many contro-

versies which our grandsires regarded as finally settled. The ponderous engine that moves thrice a thousand tons across an empire of states, the ocean steamer that carries the population of a village on its decks and the products of a township in its hold, the vast mergers of producing and distributing machinery whose colossal grasp covers land and sea, are indeed splendid evidences of constructive genius and financial daring, but more than this they are economic and social problems whose complexity bewilders and whose magnitude dismays. They force us to discredit the venerable maxim that "competition is the life of trade," and warn us, I think, that the political economy of the future must be built on a nobler hypothesis. If it be true in the long run, as all experience teaches, that where combination is possible competition is impossible, is it not equally true that combination becomes possible just in proportion as transportation becomes ampler, speedier and cheaper? So the opportunity, if not the necessity, for combination has already come in many lines of activity and will certainly come in many more. For the circumstance that permits competition, its *sine qua non,* is mainly difference of conditions. Practically speaking, this difference is chiefly found in the means of distribution. As that difference disappears, with the constantly diminishing time and cost of transport, the ability to combine will increase and the inducement to do so become overwhelming. That seems to me the obvious tendency of industrial and social movements to-day, and that tendency, I predict, will be more and more marked as time goes on.

How fast the process will develop, or what phases it will assume, does not yet admit of confident forecast. Many experiments will be tried, many failures occur, before the readjustment is accomplished. Remedies will be sought in profit-sharing, in the distribution of corporate stocks among employes, in the socialization of public utilities, in largely increasing the functions of government. By whatsoever road reached, the ultimate if not early outcome will probably be some form of centralized control with diffused or decentralized ownership. Meanwhile, the exactions of monopoly, the feebleness of legal restraints, the heaping up of fabulous fortunes, the prejudice of the ignorant, the envy of the incapable; and through all and over all the inappeasable voice of labor demanding, not without reason, a larger share of the wealth which it produces.

That these great consolidations are wholly desirable I certainly do not pretend. On the contrary, they occasion much cause for regret and not a little for grave apprehension. The utilization of new forces, the transfer to new methods, the control of producing and distributing agencies by huge combinations, must in the nature of the case inflict many hardships and involve many surrenders. Nevertheless, a great principle underlies this movement, the principle of industrial peace and efficiency, the principle of coöperation. Beyond all question that principle is to govern; despite all drawbacks its operation will prove beneficent.

Everything has the defect of its qualities. We cannot have hot iron that will not burn; so there are suffering and scars. Nor does betterment wait till everyone is ready for it or worthy of it; if it did, there would be little advancement. Fortunately, progress does not require a unanimous vote; it comes through the slow mastery of ignorance and wrong-doing by wiser conduct and higher standards of duty. We did not secure freedom of conscience and worship without the fanatic and the hypocrite; but were these vastly worse or more numerous than they are it would be a small price to pay for the boon of religious liberty. We do not have universal suffrage, or at least universal male suffrage, without the demagogue and the boss. Shall we, therefore, destroy the ballot-box and despair of self-government? In like manner, the advent of industrial association is attended by the mammoth corporation and the billionaire syndicate. But till we have found some better way to provide the capital for great undertakings, we may well restrain our envy and our fear of the financial magnate.

Let us not denounce but discriminate. The combines that are formed to pluck credulous investors, or to force extortionate profits from a helpless public, are justly regarded as the enemies of social order. Their promoters are commercial buccaneers whose condemnation cannot be too severe or punishment too swift. But you would not sweep all ships from the sea merely to get rid of a few pirates. Rather, you would multiply the ships, yes, subsidize them if need be, and meanwhile quietly hang the pirates!

So, in the unrest and discontent around us, deep-seated and alarming here and there, I read the desperate attempt to avoid the effects of industrial competition and a tremendous protest against

its savage reprisals. Every trust and combination, whether organized by capitalists or by artisans, every strike and lockout, is a repudiation of its teachings and a denial of its pretensions. The competitive theory may have answered the age of mules and sailboats and spinning wheels, but it fails to satisfy the interlacing needs, or to sustain the interdependent activities, which are founded on modern methods of intercourse and distribution; it is a theory unsuited to the era of railways and wireless telegraphy, this era of ours, so restless in thought, so resistless in action.

This, then, as I conceive, is the underlying question. Shall we continue to enforce with precept and penalty the rule of competition, whose cruel creed is "every man for himself," or shall the effort and industry of the world be hereafter conducted on a more humane and fraternal principle? That is to say, is society—stripped of its polish, its gracious customs, its altruistic pretensions—is society after all only a mass of struggling brutes fighting for the best places and the biggest bones, and is government simply an armed referee standing by to see that every dog has fair play? In short, is personal selfishness the ultimate force, and individual greed the bottom fact? If so, if that is the meaning of the life around us and within us; if there can be no advance without competition, no increasing benefit save by strife and self-seeking; if the outcome of it all is forever to be "every man for himself," then progress seems to me almost a misfortune, and the highest civilization the greatest catastrophe! For myself I disbelieve the doctrine. I am not terrified by the cry of paternalism, nor dismayed by unreasoning clamor at the dangers of monopoly. The trusts and the unions are here, in money, in labor, in production and in distribution—they came with the railroad and the steamship—and they have come to stay.

When population was scattered and sparse, when movement was difficult and costly, when communities were isolated by distance and by dissimilarity, and bonds of relationship were feeble and few, the attrition of rivalry was complacently endured. But now, when seas are spanned with steamships and netted with electric wires; when city and forest, farm and factory, mine and counting-room are joined together by innumerable pathways of steel, and the swift locomotive, rushing across continents—like the shuttle through the loom—weaves this majestic fabric of commerce which covers the globe; when life is no longer localized

in effort or achievement, and the thought of one man is the instantaneous possession of all men, the friction of unbridled competition has become irksome and intolerable. It is folly to shut our eyes to unmistakable facts or to stand in the way of inevitable events. Doubters may deride, demagogues denounce, and ignorant law-makers strive to build up legal barriers; but neither agitation, nor protestation, nor legislation, can stop the growth or prevent the advance of industrial federation.

Thus, as I view the matter, our modern means of transportation and communication, ever advancing to ends we do not yet foresee, are destined to play a larger and still larger part in our national development. Already they have transformed the methods of business, altered the customs of society, recast the relations between capital and labor, and enlarged the fields of activity to world-wide proportions. But with them and by them has come this extraordinary opportunity to unite and combine. They have given us the corporation, the merger, the holding company, all the facile devices by which competition is checked and monopoly fostered. With these have come schemes that entrap the unwary, practices that offend the rudest conception of justice, wealth gained without work and spent in vulgar display, contempt for simple living, the devouring passion to be rich.

We witness the absorption of this business and that industry, and wonder where or when the process will come to an end? What limit can be set to its operations? Is the small dealer to entirely disappear and every branch of trade to be absorbed by a trust? If so, will the employing class be further reduced in number and strengthened in power until a few great overlords control the activities and absorb the profits of industry? If so, will the fabulous fortunes of our day be further augmented and a still larger percentage of the dependent forced below the poverty line?

Surely we cannot shut our eyes to the evidences of wrong-doing and oppression which accumulate on every hand. On our great railway systems, the highways of the nation, which should be open to all on equal terms, secret discriminations which enrich the favored by preferential rates and seriously handicap when they do not defeat those from whom higher charges are exacted; in the industrial field methods of shameful ingenuity and destructive effect. The wily Indian was not more cunning or merciless in

dealing with his enemies than are some of the concerns of familiar name whose unfair and lawless methods violate every principle of honorable rivalry.

Just now the country is shocked with disclosures of avarice and venality so extensive and surprising as to make us wonder if commercial dealing in general is based upon dishonesty and permeated with graft. Can it be that buying and selling, producing and distributing, are everywhere founded on fraud and conducted by bribery and deceit? For one, I do not believe it. Possibly in our righteous anger at these revelations we have become a trifle hysterical and hastily drawn inferences which the truth does not warrant. Is there not something assuring in the fact that the public mind is stirred with indignation at these disclosures? If the peculations, extortion, and dishonesty which have filled the newspapers of late were read without surprise, without intense disapproval, we might well feel alarm for the state of business morals and the standards of commercial honor. But the unsparing denunciation which these practices everywhere receive indicates to my mind that the great majority of men are upright and trustworthy. The gratuitous distribution of mining stocks among railway officials, the extravagance and breaches of trust by life insurance managers, the payment of rebates to big shippers and the dastardly methods sometimes used to destroy a competitor, are far from proving that this is a nation of rascals and that business integrity is a lost virtue.

Yet these offences are not to be ignored or overlooked, and it is a foolish optimism that belittles their gravity. It is no time for indifference or trifling, for we are face to face with a serious situation. We see that the exercise of corporate power develops alarming abuses. We see the disregard and defiance of law, the bribery of legislators, the gift of enormous sums to party managers to defeat the popular will, and the ruin of business rivals, not by fair competition but by the most unscrupulous practices. We have cause for distrust and deep resentment. But we cannot go back to the simpler methods of our grandfathers, the old order of things has passed away; we are forced to deal with new conditions.

We must take into account that these conditions permit a concentration of wealth control which may well excite our apprehension. The unification of industries has placed a large part

of our producing machinery in the hands of a few combines, while our transportation systems have been merged and consolidated until independent lines are few and unimportant. Look at the hundreds and hundreds of separate railroad companies as they were originally incorporated, and see how the strands of control, all stretching in one direction, are woven into a score or two of ropes, and how the ropes in turn are twisted into a few huge cables which run side by side into the city of New York, while bound in with strand and rope and cable are the threads of control of the greatest commercial and industrial enterprises the world has ever known. Here is an empire within an empire, the empire of popular government and the empire of organized and concentrated wealth; and we may well ask ourselves, which of these empires shall be sovereign and which subject?

Shall these aggregations be subordinated to public authority and so controlled as to subserve the public welfare, or shall the reign of combined capital still further enrich its owners by invading the rights of the people and holding the masses in a state of servitude? Shall the seat of power in this great country be in Washington or Wall street? Just now, fortunately, it is very much in Washington, because Theodore Roosevelt is the President of the United States.

We must also realize that this tendency to combine, springing from the sources I have described, cannot be wholly restrained, much less defeated, by statutes of prohibition. The incentive is so urgent, the rewards so alluring and the methods of accomplishment of such endless variety, that by one means or another the desired result will be attained despite all attempts to prevent it. That our legislative policy in this respect has been mistaken, if not mischievous, I am fully persuaded. State and national laws have been multiplied, all seeking by denunciation and penalty to place a ban upon combination and keep asunder those who seek to unite. But this effort has not succeeded. Combinations increase and flourish despite the legislative attempt to suppress them, while it frequently happens that the prohibiting statute indirectly aids the very thing against which it is directed. Indeed, it is my firm belief that there is less actual competition in this country to-day than there would have been if none of these laws had been enacted. It would certainly be difficult to devise a more sweeping and drastic measure than the Sherman Anti-

trust Law, as that act has been construed by the highest court in the land, and one can scarcely imagine a more powerful attack upon the merger of great properties than the suit of the United States, with all its influence and resources, against the Northern Securities Company. It is true that the Government won its suit, by a vote of five to four, but as President Roosevelt had the candor to say in his last annual message to the Congress, whatever may have been the moral advantages of success in that contest it has not produced the slightest economic change. No railway charge has been reduced and no facility added or improved in consequence of that litigation. Two transcontinental lines and the great interior system which they had acquired are as complete a monopoly now as they were before the suit was begun, and the stock of the Northern Securities Company sells much higher to-day than it did when the judgment of the Supreme Court was pronounced. Surely the time has come when we should recognize that competition cannot be compelled by statute, and that it is the part of wisdom to control and direct an economic movement which cannot be, and ought not to be, entirely resisted. Why should we not frankly admit the failure of prohibitive enactments and seek for practical and useful results through measures of restraint and regulation?

What, then, are the remedies for corporate wrong-doing? How shall we prevent the lawless excesses, the insatiable greed, the wholesale corruption which recent investigations have opened to our astonished sight? What adequate checks can be applied, what protective methods adopted to safeguard the public welfare against the dangers of combination?

Most of us shrink from the solution which socialism offers. We instinctively reject the remedy of public ownership. We have seen the extension of government functions to one field and another, with more success on the whole than was looked for, yet we hesitate to seek further in this direction the panacea for industrial and social evils. We deprecate the restriction of private enterprise and look with misgiving upon every scheme of paternalism. We distrust the ability of government to manage the vast and varied operations which are the result of modern combination. We fear its slowness, its expense, its red-tape methods. We are accustomed to think of our captains of industry as far more capable than a government bureau; and we

utterly disbelieve in the theory of promoting social welfare by merging the individual in the state. But when investigation brings to our view the inner workings of some of the greatest private concerns, even those which we have supposed to be the best of their kind, when we discover the crookedness and corruption, the pervading injustice, which we had not even suspected, we need not wonder that thousands of people are already saying that a government monopoly, whatever its disadvantages or dangers, is far better than any private monopoly which exhibits such mean and mercenary features. Is there no other way for the state to deal with a monopoly than to absorb it? Is that the only alternative? This much is certain, little as we like it: Unless we can find ample means for preventing the encroachments and correcting the excesses of corporate power, the movement for government ownership will gain rapidly, very rapidly, the support of public demand. Those who deprecate such an outcome and desire to preserve the benefits of private industry may well concern themselves with every effort to put a stop to the ruthless methods and arrogant disregard of public rights which now so often characterize the conduct ot corporate affairs.

Much can be done by education. A clearer understanding of these great questions, in their political and economic aspects, will greatly aid us to utilize the advantages of associated effort and at the same time minimize the evils which now attend the methods of combination. When once there is better knowledge of a subject of such commanding importance, an intelligent public sentiment will find expression in wise and workable laws whose enforcement will go far towards correcting the misconduct now so frequent and so offensive.

Especially do we need to cultivate a spirit of obedience to law. In the nature of the case the maintenance of social order and the rights of the individual depend upon the observance by all of the rules of conduct prescribed by public authority. If those rules are disregarded by the influential or evaded by the dishonest the whole structure is put in danger. If the rich or the powerful are not reached by the law, the law itself falls into disrepute and the safety of all is imperiled. Unfortunately there is too much ground for the belief that the possessors of large wealth often succeed in avoiding their legal obligations

and that this is the secret of their abnormal fortunes. It will be a distinct advance in public morals and a potent aid to social tranquility when it comes to pass that no law can be broken or circumvented, no matter what the wealth or station of the offender, without prompt and certain punishment.

Moreover, we have discovered that much can be accomplished by publicity. It is the nature of meanness and deceit to work in secret; the most potent preventive is the fear of exposure. When corporate operations are open to public knowledge, when they may be known and read of all men, when concealment is impossible, the danger of oppression is reduced to a minimum. And this for the reason that there is some quality in human nature, some instinctive faculty to approve the right and condemn the wrong, which makes the boldest transgressor unwilling to meet the consequences of public disclosure.

We must recognize the fact that our modern methods are to continue, and that more and more capital will combine to prosecute great undertakings. We must accept, I think, the monopolistic trend of these conditions. We can restrain and regulate by wise legislation, we can limit and curb by suitable laws, but after all I am sure we shall find the most powerful aid to decent conduct in a large measure of publicity. When everything is done in the open and no unconscionable act can be kept out of sight, the dishonest will become timid and the unscrupulous afraid.

Just now we are witnessing a tremendous upheaval. All at once everything seems to be uncovered. In one place and another, in this business and that industry, in the east and in the west, many masks have been torn off and the ugly faces of avarice and dishonesty exposed to public view. It is a startling revelation, but perhaps just the thing needed to arouse us from apathy and break down our stolid complacency. And it will accomplish wonders for the public good. The fact of exposure will be more potent than the most drastic statute. Laws will be enforced, as they have not been heretofore, the standard of business morals will be distinctly elevated and a public sentiment created which will prevent the recurrence of such misconduct.

After all, and more than all, we need to apply old principles to new conditions. We need to quicken the insight, clarify the

judgment and elevate the moral sense. When the force of public opinion compels those who manage great undertakings to realize their responsibility, compels them to take into account their obligations to every interest and every person affected by their operations, there is little danger that their conduct will be unfair or oppressive. The misdeeds which offend and endanger will quickly disappear when the hearts of men are filled with justice and uprightness becomes the habit of life. We want an old-fashioned revival of honesty, a clearer perception of the rights of others, a more robust and resolute integrity. This means a good deal more than technical observance of the law's requirements. It is not enough to abstain from the frauds that deceive, the trickery that entraps or the bribery that seduces. To-day as never before comes urgent demand for the unselfish and helpful spirit which protects the weak and safeguards the defenceless.

We need a better sense of proportion. We are accustomed to overvalue material wealth without taking into account the manner of its acquisition. We need to revise our estimates and give regard only to men of honest motive and honorable conduct. We need to realize as Ruskin puts it, "that there is more happiness in a single dollar earned by honest toil than in all the plundered wealth upon the shores to which false lights have lured an argosy."

The educated men and women of to-day should be alive to the opportunities that invite and the needs that must be met. Transportation and combination have brought us face to face with difficulties that embarrass and dangers that alarm. Under the conditions of competitive industry the task of public administration was comparatively easy, but under conditions which now exist, and from which we cannot escape, complexities multiply and burdens increase. Can we settle these great economic questions? Can we utilize the forces of combination and at the same time avoid the extortions of monopoly? Can we keep capital within proper restraints and give to labor its just reward? Can we preserve the rights of private property and yet prevent the abnormal accumulations which are so disproportionate to effort or merit? Can we put a stop to the evils so often connected with the methods of private enterprise and so hold in check the menacing advance of socialism? In short,

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can we raise this wide realm of commerce and industry from selfishness to charity, from strife to friendship, from competition to coöperation, from the warring instincts of the savage state to the larger and nobler needs of associated life? This is the problem of railroad and steamship, of telegraph and telephone, of the subtle and limitless forces of modern life, the problem which will test the wisdom of statesmanship and tax the resources of public authority.

Because I believe that we shall succeed in solving these weighty problems, I have little sympathy with the pessimistic views so often advanced in the Commencement addresses of 1906. I realize that conditions have changed and novel questions arisen. The industrial readjustment now taking place presents many difficulties and makes many demands. There is much to disturb the complacent and sober the thoughtful. But why should we fear for the welfare of our country or the stability of its institutions? When was there more to justify hope or stimulate enthusiasm? Are not our strength and courage and patriotism equal alike to present emergency and future peril? Surely the experiment of self-government, with all its promise and uplifting power, is not doomed to failure because here and there a man has been found faithless to his trust. On the whole I believe that our material prosperity has been matched with an equal advance in the standards of morality. Never have we been so quick to condemn shortcoming, never so ready to recognize uprightness of conduct. Despite these gloomy forebodings, I believe in the integrity and dependableness of the American people, and feel sure that our national life is to be broadened and elevated by the experiences through which we are passing.

The same forces that impel to industrial union likewise impel to social amity. As the work of the past has secured the boon of liberty, so the work of the future, your work and mine, is to secure the blessing of fraternity. 'Twill be the greatest struggle the world has yet imagined. And in that struggle, whatever its varying fortunes, the men and women of Wesleyan University, the sons and daughters of our dear Alma Mater, will bear no idle or inconspicuous part.

WEDNESDAY

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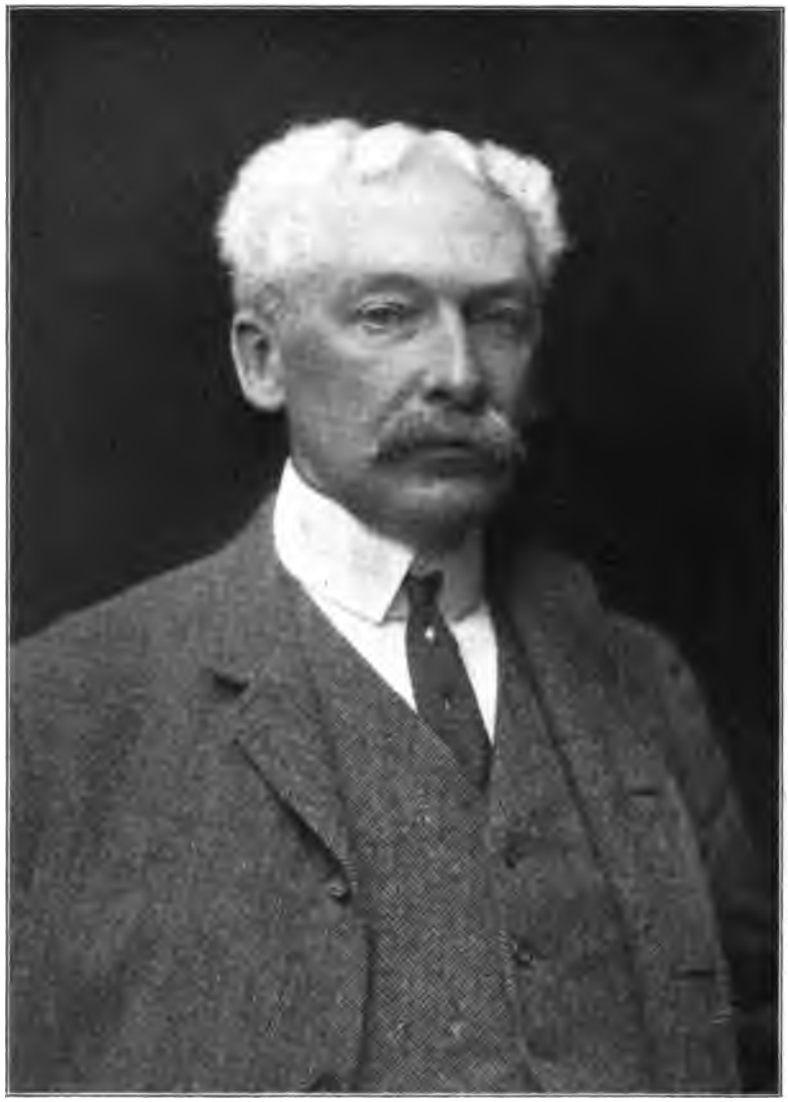


STEPHEN HENRY OLIN

ADDRESS

By Stephen Henry Olin

TO the American of 1831 the time in which he lived was full of interest and achievement. To us it seems dull and uneventful—a period over which the historian nods and the rēader yawns.

There had been growth in population and material prosperity. There had been conquest of the wilderness marvelous when measured by the ancient standards—the strength of a man and the speed of a horse.

Property had increased, but the hours of labor were long and its wages small. There was no luxury nor the abundant wealth which fosters art and founds galleries and museums.

It was not a heroic age. There were old men who could tell of the campaigns of the Revolution and one who had subscribed the Declaration of Independence and there were boys—thousands of them—who were to die for their country on the battlefield, and one who was to sign the Emancipation proclamation; but political contests were for the spoils of office or for economic advantage or ended in compromises which brought peace but not glory.

Emerson was about to exchange the pulpit for the platform; Longfellow was quitting prose for poetry and Hawthorne was meditating "Twice Told Tales," but it was still possible to ask, "Who reads an American book?"

The genii of the coming time were beginning to stir in their concealment. On September 1st, 1831, the first locomotive whirled its train into Schenectady, twelve miles and a half in fifty minutes. In October, 1832, Morse was to whisper the promise of the telegraph. The New York Stock Exchange was already open, and it was a dull day when less than two hundred shares were sold.

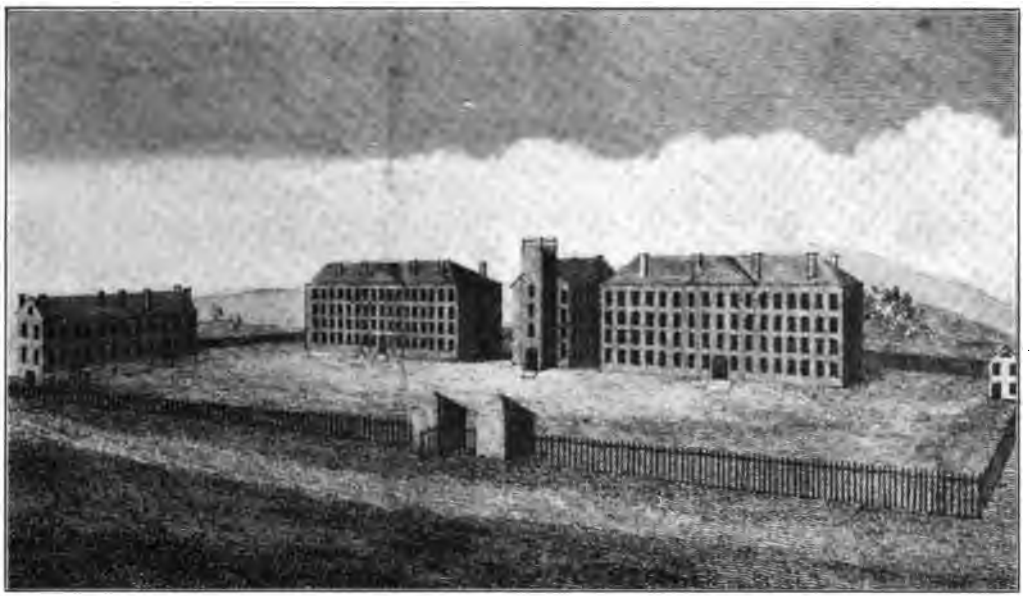
Of life and manners we are well informed. Indefatigable Englishmen landed in New York from the monthly packets,

steamed up the Hudson by the Lady Clinton or the Ariel, journeyed to Niagara Falls on the canal, descended the Ohio and the Mississippi, jolted back again in swinging stages, hurried through New England and went home to write volumes upon the badness of American roads and inns and manners. Captain Basil Hall even paused on our beautiful High Street, but unluckily he hit upon the hour of dinner at Captain Partridge's Military Academy. It was "such an exhibition of feeding or devouring as would have excited the admiration of a cormorant." "I really never," says the gallant captain, "saw anything so disagreeable." Fenimore Cooper, despondent as is the wont of repatriated analysts, found his countrymen boastful, rude and narrow-minded. To Andrew Jackson, elate, as becomes the elect of a nation, they were "twelve millions of happy people filled with all the blessings of liberty, civilization and religion."

At all events they needed education and they knew it. In 1831 four new colleges were added to the fifty-seven already existing and Wesleyan University, rich in an endowment of twenty thousand dollars, with a President, two professors and a tutor, threw wide its doors.

The idea of a foursome over a college course was not then so startling as it would be now. Venerable Harvard, nearing the end of her second century, had, indeed, sixteen professors, but eleven of them belonged to the Faculties of Law, Medicine and Theology. Yale had twelve professors, but only four were in what we now call the college or the School of Arts; and of these four the Professor of Greek and Latin taught Hebrew also, and the great Silliman was Professor of Chemistry, Mineralogy and Geology and, lest he might seem to be wasting his time, of Pharmacy as well.

It is impossible to view without regret the passing of the New England college of that early time. The simplicity of its equipment enhanced the nobility of its purpose and the completeness of its success. The type had become fixed and seemed to be permanent. A little group of scholars read with the students from Homer and Virgil, from Demosthenes and Cicero and Livy, from Sophocles and Horace the same passages which they themselves in youth had learned and which for centuries had helped to form the minds of all cultivated men. There was



AMERICAN LITERARY, SCIENTIFIC AND MILITARY ACADEMY

(From the original plan. The first building at the left of South College was never erected.)

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some mathematics, some history, some rhetoric, some of the elements of natural science in which knowledge had not yet grown wide enough to become diffident. At the summit stood the antique figure of the President, *Præses dignissimus*, clothed with the powers of discipline, keeping in his hand instruction in that philosophy, which, although its progress had been in circles, had since the time of Socrates furnished the highest exercise of the noblest minds. It was his duty to see to it that education developed not merely Hellenists or mathematicians but men, not merely citizens of the Republic of Letters (which in those days still claimed allegiance from every college graduate), but citizens of the world fitted to undertake all the tasks which an unsophisticated age had learned to impose.

We have changed all that. We have changed even the metaphors which convey our ideas about it. Who thinks of a great university as a fountain, at which all thirsty minds find the same refreshment? It is rather a counter where all beverages may be had for the asking and where for the most part even the youngest customer is permitted to mix them as he will.

The President of a great modern university must have financial ability to gather and administer vast endowments. He must have administrative skill to follow his scattered flock as it is led by devious paths to divers ends.

But how can he maintain the ancient authority over his aggregation of specialists, each confident of superior acquirement in what to him is the most important branch of learning? How difficult, through the luxuriant upgrowth of detailed knowledge and technical skill, to point out the ways of wisdom in case some student should elect to walk therein!

It is no wonder if the Baccalaureate preacher sometimes passes by the audience before him and devotes himself to sinners with whom he is more familiar—less inscrutable sinners—such as great statesmen or men who are very, very rich.

It is always the business of education to train the young in the morals of the past and the learning of the present.

Men teach the ethics of the past because they know of none better. It is easy to found a new religion, but for nineteen centuries no one in the western world has established a new code of morals. Of the ancient precepts examples must be sought in the past. Our standards of virtue, like our standard

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measures, must be of stuff which does not shrink or warp. Human lives are not such stuff. No man's character is safe while he lives, nor his reputation while his friends live, and no matter how long beatification is postponed, the Devil's Advocate may always hope to prevent it by some lucky find of diaries or letters. And as with the classic examples, so with those nearer to us and more persuasive. A man sets his house in order and straightway forgets that it was not always clean and chilly. He forgets that he was once acquainted with the temptations which now annoy him by their riot among his neighbors. As historic virtue impresses, so contemporaneous sin startles and interests us. Combination and publicity make offences conspicuous which are not new. Division of labor enables men to be curious and critical concerning acts formerly familiar in their daily work and observation. When there were no great combinations of capital there was tainted money, and there was tainted beef when every village had its slaughter-house. The virtues themselves conspire to make us praisers of the by-gone time and content if the future shall imitate it. Filial piety receives its picture of the past from parental reticence, and successive generations, each humbly conscious of its own backsliding, have steadily increased the common fund of temperance, toleration and compassion, and have not yet exhausted the stock of sterner qualities laid up in ruder times.

The task of teaching contemporary knowledge has in the last half century grown more difficult and complicated. It is not merely that certain sciences have gained new scope and importance, and that their boundaries are widened, not by scattered adventurers but by organized forces coöperating in every land, trained, equipped, stimulated by great rewards. The change is not so much in the subjects of thought as in the mode of thinking. It affects as well the teacher who uses the formulas of Euclid as the teacher to whom the formulas of Darwin have grown antiquated. It affects all thinking men. There are new notions of matter, of force, of time and space, and new conceptions of law. We have come to regard our shreds and fragments of knowledge as glimpses—fleeting and uncertain glimpses—of a seamless garment which is the universe.

One great function of the modern college, the development of physical training and sport and by this means of health and character, was unknown in Willbur Fisk's day.

The greater part of conduct is governed not by the laws of the land or the formal teachings of the church, but by habit and tradition and taste. The sports of a people have always been a school of its manners. Men have been by turns in large degree what the stadium, or the amphitheater, or the tilt-yard or the bull-ring or the cricket-field has made them. In 1831 our traditions of sport were English, inherited through the Puritan who hated pleasure and the colonist who begrudged the time for play, and coarsened by the rough usage of the frontiersman. Since 1831 there have come other millions, to whom even these traditions are unknown, whose standards of manners are formed by the regulations of armies or the habits of aristocracies as seen from below, or perhaps in such schools as the Mafia or the Camorra.

It is a function of the colleges—in which each needs the aid of all the others, in which each employs the vigor of its young men and the experience of its old men—to frame the definition of manliness, and to enforce it against the definitions of the race-track and the professional athlete. Is temperance worth while, and discipline, and self-control? Do we owe constancy to our friends and fair play to our rivals? Does success pay for dishonor? Is it honest to break a rule when the umpire is not looking? Is it gentlemanly to shake a batsman's nerve by jeers and gibbering? Whatever standards the colleges establish will be to the schools an example and to the next generation a habit. Tell us how men play foot-ball and we will know something of their courts, their politics and their insurance companies.

But wise men tell us that publicity, however welcome to mature and seasoned scholars, is bad for boys and that the colleges should withdraw from contests which attract crowds and are described in the newspapers.

Are churches closed because the congregations grow too large? Shall not young men rejoice in their youth?

Rules should be perfected and enforced, courts of honor established and sustained, but each college for its own sake and all for the sake of the nation should keep up those public sports by which the college gives its chief, if not its only immediate, collective impulse to life.

None of these tasks of the college—neither the unchangeable, nor the changing, nor the new—has here been left undone.

Wesleyan has been a school of morals. The sons have been taught the fathers' commandment. There have been the ancient precept and the modern instance. Each of us in his time has seen how good men live. If the ultimate sanctions of duty have seemed to change, its immediate obligation has not been relaxed. If our teachers do not believe with Mr. Wesley, that sin causes earthquakes, they know better than did Mr. Wesley what charity and faith and hope can do for men shaken by earthquake.

With the old morality Wesleyan teaches the new learning. It might easily not have been so. Modern science is costly and the college has been poor. Science threatens dogma and the college has always been pious. It would have been easy to understand and not impossible to forgive if there had been an effort to cramp the student to fit the instruction instead of broadening the instruction to suit the age. There are members of the Faculty whom the oldest of us revere as masters and the youngest of us love as friends. We appreciate their learning, their patience, their loyalty, but most of all we honor the steadfast courage which has said, "Come who will to Wesleyan, Truth shall come." To them we owe it that the air of the new century blows fresh and free through every class-room, and that the college can serve the future as it has served the past.

In the Yale gymnasium the oldest in a long line of trophies won on land is the baseball which the crestfallen Agallians left in New Haven on a hot summer afternoon forty years ago. Thus, before colleges began to meet under their own names on the ball-ground, Wesleyan under a classic alias paid her entrance to the field of intercollegiate sport. Health and strength might have been developed in our own gymnasium and upon our own playing field, but to our contests with others we owe it that our seclusion, so favorable to learning, has not been an isolation fatal to life; and that our students may begin the contests of manhood against rivals whose measure they have taken in the sports of youth. In these forty years there have been victories well won and defeats well endured. Sound traditions have grown up. Fair play has been respected. These boys have held in their hands something of your honor and of mine and they have not stained it. College spirit has risen. There have come emulation, self-sacrifice, devotion.

Wise men tell us that the college, and especially the small college, is doomed at an early day to disappear. "Life is short,"

they say, "and art grows longer and longer. This is a practical age. The preparatory schoolmaster needs more time, the professional schoolmaster needs more time. We can no longer afford to devote four years on the threshold of manhood to the mere Humanities. This schoolboy must take his law-book and that one his scalpel and work at something which brings money."

If this be the tendency of the time, it is a tendency to be deplored, and the heads of great universities and the masters of schools, instead of dividing the inheritance of the college while it yet lives, might well make every effort to prolong that precious life and crown it with greater honor. Our educational system needs strengthening rather where it touches the unities than where it concerns the divergencies of life. For the last few months there has been going on throughout the land a grand inquest into social conditions. It is a time of prosperity—of material prosperity, greater than ever has been known and so general and widespread that the pessimist who denies its existence must always point us to some newly founded Ghetto or Lithuanian colony. Even there he finds people so content with their lot that they are bringing their kinsfolk by shiploads to share it. In this prosperous time we have been scrutinizing the conspicuous products—the chief instruments—the types and illustrations of prosperity—great insurance companies, teachers of thrift and altruism—great railroads, carriers over half the land—industrial corporations which have taken over a great part of the work of the people. We do not hear that there is any lack of highly-trained actuaries or engineers or managers for these enterprises. There is no lack of professional accomplishment. The need is of common honesty—of common regard for the rights of others—of the self-respect which puts men above peculation and bribery. The defect is in ideals—in character. With these, colleges have much, and professional schools have little to do. The man who reaches his bachelor's degree without an instinct of honesty or a sense of honor is not likely to acquire either.

Rome fell—not for lack of skilful architects, or learned lawyers, or trained generals, but because there were no more Romans. The state had lost the art of teaching virtue.

There was a time on the Continent of Europe when all men bore arms. Then came the day of professional soldiership. Training became more severe and continuous, until in the time of

the Great Frederick no one dreamed that the state could be defended except by men drilled their whole life long. There came a great peril and the system changed. Every man for the sake of the Fatherland devoted three years to learning the essentials of the art of war. The professional army vanished. There were no longer soldiers comparable with the veteran hussars of Ziethen or the battalions of Schwerin, but the public force had become irresistible. It was the nation in arms.

There are times of crisis when orderly progress is checked or liberties and rights are threatened—when the skill of professional men, however accomplished, is of little avail. Public safety must rest upon a broader basis. Honesty alone would not suffice. There are dangers against which only a lettered nation is a nation armed. At such times it will seem a little thing whether lawyers have spent a year or two more or less over their precedents or engineers with their formulas or chemists with their gallipots; but it will be a great thing if throughout the land men who in these college barracks have learned the same discipline and the same inspiration flock back to the colors to defend the civilization which the scholar moulded and developed and which the scholar will maintain.

An institution is a device by which the purpose of an individual lays hold on the immortality of the race. When, after seventy-five years, a foundation answering to the needs of those who use it answers still to the prayers of those who planned it, we may well hope that it is destined to endure.

But however this may be, for us this college stands for the things which abide as the flying years slip by: A friendly and indulgent Fame, an undying Family, a State whose demand for loyalty is direct and familiar as in a Greek City.

Is it four years since first her gentle hand was laid on us or is it four and sixty years? There is remembrance and hope and deep affection for the Foster Mother of us all.

HERBERT WELCH

ADDRESS

By President Herbert Welch

Faith and Intellectual Progress

THIS theme, serious though it may appear for a festival occasion, can not be wholly out of place. For the festival which we celebrate is that of a Christian college,—an institution, that is to say, which stands for both the aesthetic and the moral, both the intellectual and the spiritual. Wesleyan University is Christian: Christian in its history, Christian in its influence, Christian in its conception of culture, Christian in its constituency, Christian in the personnel of its teaching staff, Christian in its motive and its ideals. Must it be less excellent as a college in order to be thus thoroughly, consistently, consumedly Christian,—permeated and vitalized from root to blossom by the spirit of religion?

The question is not so simple as it seems. Some there have been, some there are, who would deny the legitimate place of human learning in religion; some who would shut religion from the temple of learning. In the early Christian church, two contending parties could be found: one, remembering only the splendor of truth and of beauty, urged that all the learning of the heathen world,—its philosophy, its science, its art,—might have a place within the Christian realm; the other, remembering the immoralities of pagan peoples, the absurdities of pagan mythology, the heresies growing out of pagan importations, the aristocratic nature of pagan culture, the scorn of pagan scholars for the followers of Jesus of Nazareth, looked with suspicious eyes upon this truth and this beauty, and would have none of it! From the latter side Chrysostom called learning "folly", and "child's play"; from the former Origen claimed that all knowledge, if rightly studied, would lead up to Christianity, and might be claimed by Christian students as their rightful heritage. These two schools of thought and feeling still exist. To which

we belong can not be doubtful. Wesleyan University has stood, and stands, for the joint claim of head and of heart; not simply for the reconciliation, but for the union, of learning and religion; for the belief that intellectual progress and faith are and should be, now and forever, one and inseparable.

If man is a unit, then all that goes to make up humanity should harmoniously dwell and grow. Spiritual gain should not mean physical or mental loss or deterioration. Science and art should be the familiar friends of piety. Revivals of learning and of religion should be expected to occur almost simultaneously. Darkness should typify at once ignorance and sin. Without falling into the old Greek error by affirming that virtue is synonymous with knowledge, let us plead that virtue and knowledge may walk, have walked, should walk, hand in hand.

This is not to say that they are of equal importance for the world's advance. Mr. W. H. Mallock in his "Reconstruction of Religious Belief" has recently emphasized the familiar truth that all civilization is dependent on *faith* in freedom and God and immortality. Mr. Benjamin Kidd a few years ago made a strong argument in his "Social Evolution" to show that *intellectual progress* was by no means the same as civilization, and that in some cases civilization advanced without intellectual gains. "In average mental development," he asserted, "we are not the superiors, but the inferiors of the ancient Greek people." In isolated giants like Socrates and Aristotle and Phidias, as well as in the general level of intellectual powers, the Greeks were the ablest race that ever lived,—as far above the Englishmen or the Americans of to-day, if we are to believe Mr. Kidd, as these are above the African negroes. The things which seem to be *our* achievements are really the total achievements of the world's history. The steady advance in civilization is dependent, not upon any necessity that each generation shall be in intellectual grade above the one preceding, or that the intellectual classes shall produce and reproduce the leaders of activity (for our society tends to renew itself rather from the base), but it is dependent upon the quickening influence of religion. It is not mental capacity and power in which the low races are deficient, but social environment. Real progress is social in its nature, and the social relation and motive are essentially religious. To quote Mr. Kidd's own words, "The evolu-

tion which is slowly proceeding in human society is not primarily intellectual, but religious in character." Not mastery, but service, makes civilization possible. Religion is at the heart of all genuine progress.

Mr. Kidd's argument may prove too much; but even admitting it to be true, then that which contributes to the enrichment of the religious life and the strengthening of the religious impulse makes mightily for social progress, for the realization of that Kingdom of God which is likewise the Kingdom of man, the dream and goal of all noblest aspiration. Now, among the forces which enrich the religious life and strengthen the religious impulse, not last or least is intellectual progress. The church may precede the college, but can not exist long and strong without it. Religion at the heart of society is often choked by accretions. It is among the functions of intellectual progress to clear away the rubbish and give the religious instincts free play.

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A brief glance at Christian history will suffice to indicate the debt under which Christianity has been placed at its times of crisis by the ministry of learning. In the early centuries learning was often discounted in the estimation of earnest men. The pre-Christian world had gone farther in culture than in faith, and to the first Christians, the comprehension of the supreme moral needs about them, the expectation of the world's approaching end, the harrying by persecution, the unfriendliness of learned pagans, the dealing with degraded and later barbarous peoples, gave little encouragement or opportunity for culture. But even the early church had its catechetical schools, and history had not run far before the intellectual development of the church had transformed its life. Greek thought turned Christianity away from simple Judaism and made it theoretical, speculative, contentious. Whether orthodox or heretical, it became metaphysical. Such change has seemed to some but poor service, yet what would Christianity have been without metaphysics? Cry as we will against dogma, the religion which does not face the questions of universal meaning and of perennial interest will stand discredited before the court of reason. The flower, to be sure, lives, and knows nothing of life. It toils not, neither does it philosophize. But man philosophizes, by the very nature of his being. Take a single instance: Religion, we are told, is nothing but "the life of

God in the soul of man." True,—and simple. But what is "life"? And what is "God"? And what is "soul"? And what is "man"? The conception of God, his personality, character, activity; and of man, his constitution, duties, possibilities, will make religion a great or a contemptible thing. A recent writer, Dr. Charles Cuthbert Hall, has reminded us with emphasis that only a metaphysical religion is equipped for world conquest among races where the contemplative rather than the historical habit rules.

Remembering, again, that religion can not dwell forever on the Mount of Vision, however high the truth, we may recall that Roman thought brought ethics to the front, and made the life of service essential in Christian character. It may always be freely granted that philosophy, whether Greek metaphysics or Roman ethics, is no substitute for religion, that its appeal is limited and its motives not dynamitic; but a religion that is not philosophical is thereby proved to be impotent.

Once more, the great Protestant Reformation, when it transformed Christendom, had back of the religious revolution an intellectual movement as wide as the continent. Something had happened in Europe. The Crusades, the growth of chivalry, the development of cities and commerce and wealth, had come into the Dark Ages; but more. That exaltation of the individual, that sheer thrust upon personal responsibility which has proved the origin of much that is best in modern civilization, was the strength of the Reformation. It came from whom? from where? Through these centuries had been gathering forces that burst out at last in a refreshing flood. The chantry schools, the guilds, the beginnings of a system of public instruction, the writing of a romantic literature, the invention of printing, the enlargement of the intellectual horizon by the discovery of new worlds, all contributed their share. The monasteries were depositories not only of formal religion, but of learning, which was bound to break up the formalism and apathy of the church. The efforts of scholars to subdue all learning to Christian forms and put it under Christian sanctions, the reassertion of purely intellectual interests, and the insistence that intellectual and religious interests must be made one,—these were prophecies of a new day. Then came the foundation of the great universities. Abelard at Paris was teaching with his thousands of pupils about him. Oxford was begun.

Europe was being born anew. The Renaissance was only a return to nature and to classical sources with their varied interests in literature and art; and the Renaissance, with its springtime breath, came before the Reformation. Petrarch, and Boccaccio, and Dante preceded Savonarola. Ascham and the great English public schools, Colet and Erasmus and Sir Thomas More began to stir the brain of Britain before its heart was opened by the preaching of its Protestants and the death of its martyrs. The Reformation meant that the personal was above the ecclesiastical, the spiritual above the material, the real and vital above the formal. It meant that religion was human and practical rather than scholastic; that it was to be taken out of the church into the soul, the home, the shop, the capital. And the view of life that lay behind this view of religion was the intellectual product of the Renaissance. This great Reformation, preceded and accompanied and followed by exploration and invention, by the development of poetry and drama and art, stands as an eternal witness that the revivalism which is unintelligent, narrow in its scope, can not be permanent; that the only revivalism which is safe is that which is human in its interests and broad in its sympathies.

The service of intellectual progress to faith may be seen again in the powerful religious awakening of the eighteenth century in England. Not only was it marvelous in its effects upon education, manners, literature, national temper, but its beginnings were linked with intellectual forces of no mean grade. Before John Wesley and his preachers came Bacon and Harvey and Hobbes and Newton and Milton and Locke and the men of Queen Anne. Methodism was born in a university. It built a school almost as soon as a meeting-house; and so effectually did Wesley teach that it was "impossible for a people to grow in grace without reading," that the early itinerants were all book-agents, and American Methodists had no sooner organized themselves into a church than they founded a college. It took two conflagrations to burn out their first enthusiasm and make them postpone their efforts at higher education until that later and more auspicious day when this Wesleyan University was born.

Why should one doubt that now again learning is to minister to religion, and that the philosophy, the history, the literature, the education, the science, which made the nineteenth a century

among centuries are to herald the dawning of a religious epoch whose like the world has never seen?

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If I may venture for a moment to point out some special services of intellectual progress to faith, I may suggest that intellectual progress enlarges the field of religion by revealing its content and purpose. Religion deals with God, with nature, with man, with righteousness. It grows with its knowledge of the world and of life. It specializes and intensifies, as study discloses new points of moral and social need. It seeks the right; and intellectual progress with its exposition of family and property and military and political problems helps to answer the question, "What is right?"

Intellectual progress gives to religion reverence for law by showing the depth and the width of its working. It makes natural the attitude of wonder and awe in the presence of the inexplicable. It spells out solemn lessons as it searches into the mysteries of heredity, displaying no arbitrary caprice, but steadfast rule, behind the puzzle. It shows that law and freedom are not opposites, but come to their highest perfection side by side.

Intellectual progress broadens the relationships and judgments of religion, dinning into its ears the value of freedom and of truth, quenching fanaticism, and giving the wider outlook which brings a sympathy with diverse forms of belief and endeavor.

Intellectual progress tests the dogmas of religion, its very assaults inflicting the wounds of a friend. Even the infidel who by his well-aimed shots causes the wooden traditions to splinter and fly, leaving bare the steel fortress of truth, has done a friendly office to that religion which desires the truth, the whole truth, and nothing but the truth.

Intellectual progress strengthens the foundations of religious faith. By that knowledge of nature and history and philosophy which places Christianity in its true setting, it affords new reason for confidence in the eternal truths revealed through Jesus Christ. The scientific temper in religion, if carried unshrinkingly to its conclusion, is all that faith need ask. The readiness to face all the facts, the willingness to learn and to retract, which mark the true scientist, prepare one, as Bacon long ago remarked, to enter the kingdom of Heaven also like a little child. The race that can

say with Plato, "Let us follow the argument, wherever it leads," will surely be led into light!

Religion has contended, not once but a thousand times, against the "oppositions of science, falsely so called"; and against the advance of scientific truth theology has fought on many a welter-ing field. Scarcely a new discovery of speculative or practical science that has not been looked upon with hatred or with dread by some faint-hearted and short-sighted Christians. But, steadily pressing forward, science has been seen to hold in her hands not swords, but gifts, for religion. Evolution, propounded as an inclusive theory of the shaping of worlds and the world and life, proves not to destroy faith but to illuminate it; and with its suggestions concerning morals and Scriptures and theology to exalt the God, who in a carpenter-creation seemed to be chiefly power, into a God of boundless and surpassing wisdom. Philos-ophy and science together have brought into human thinking the doctrine of an immanent God, and theology trembled to see God brought from His heavens into trees, and stars, and men. But behold how marvelously, as men have seen that God is in the world, in its history, in its Bible, in its religious systems, is truth simplified and the hearts of men are comforted!

Thus has intellectual progress been ministering to faith, open-ing paths, removing stones of stumbling, calling onward and upward. It is not the substitute but the servant of faith. To say that the cultured should care less for religion, is to say that the man who has climbed a mountain should care less for the sky. He may imagine that his mountain-top is the summit of the universe, it is true; but if he will but lift his eyes, he will see a bigger and a bluer heaven than has ever broken upon the vision of him who keeps his home within the valley. Did Matthew Arnold speak truly when he defined culture as "the study and pursuit of perfection"? Then must man be ever mindful that his home is even beyond the mountain's peak.

Here stands he, shaping wings to fly.

Like the bird on its tilting twig, he is care-free before the expanses and abysses that open,

Knowing that he has wings.

Culture leads him by the hand until there is no higher rock to mount; then, pointing to the blue infinity, she can but cry to his eager soul, "Now fly!"

But culture, while powerless to achieve the highest,—how much has she achieved by leading men thus upward from the swamps and mists, and gesturing toward the open sky? The greatest victories of religious history have been wrought by the scholars of religion. Here is a people to be lifted from a bondage worse than death, to be transfigured from a mob into a nation, to be organized, generalled, tutored, established,—to whose hands shall the task be entrusted? Out of a king's palace, by way of the desert, comes one "learned in all the wisdom of the Egyptians," all that this ancient world can teach him by its priests and its schools; and Moses, the scholar of the Old Testament, becomes the hero of the Old Testament, the inspiration of a mighty history. Here is a new Gospel to be proclaimed to a needy world, the most splendid enterprise of the ages to be undertaken; who shall be its chief advocate before princes and peasants? From the feet of Gamaliel comes a young Jew of Tarsus, with all that the Greek and Hebrew learning of the day could give him, he too coming by way of the desert where God dwells alone; and Paul, the intellectual giant of the Apostles, the trained man of the schools and of the solitudes, lays the foundation of a new civilization for the continents. The great men of the Christian church, Origen and Jerome and Augustine, have been its great scholars. Galileo with his telescope and his "None the less, it moves," is the Christian student, opening to men a new vision of the grandeur of the skies. Huss coming from the University of Prague, to have his ashes scattered on the Rhine in witness to the truth for which he died, Wyclif yonder in Oxford and Calvin at Paris, Luther from the University of Wittenberg, are examples of the Christian scholars who have moulded Christian history.

Faith, if it be genuine, must fruit in deeds. Does intellectual progress hinder or help in the great work that is set to our age and to every age? Modern education is said to produce critics and pessimists. If it be so, and if this be all, then let the colleges be closed, that the political service, the social reform, the Christian evangelism of which the world stands in sore need may prosper! But who that surveys his country and his time with impartial eyes can so believe? Bismarck may have been right or wrong when he declared that one-third of the graduates of the German universities ruled the German Empire. Macaulay may have been right or wrong when he asserted that if one would glance over

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the calendars of Oxford and Cambridge Universities for the last two hundred years, he would find there the names of the men who have created modern England. But certain it is that while only one in a hundred of our American men have come from the colleges, seven of every ten of the notable successes of our day are college men. In them we find, provided education has not degenerated into mere bookishness, enthusiasm tempered by sanity, carried to efficiency.

I do not forget that Mr. Wendell Phillips years ago, in his Phi Beta Kappa oration at Harvard, arraigned American scholarship almost with bitterness because it had so poorly served the land. But I do not forget that when Mr. George William Curtis undertook to answer him, he had the bulk of the facts upon his side. He needed not to ignore the great men with little schooling, Washington, and Franklin, and Jackson, and Lincoln,—"tallest white angel of a thousand years,"—but he could point out that the pen which wrote the Declaration of Independence was held by a graduate of William and Mary College, Thomas Jefferson; that the ablest defender of that Declaration was John Adams, a graduate of Harvard College; that the man called "the Father of the Constitution" was a graduate of Princeton College, James Madison; and that the man whose advocacy made possible the adoption of that immortal document was Alexander Hamilton, a student of Columbia, then King's, College. He could remind us that the great servants of our country abroad had been among the great scholars of the Republic, Irving, and Lowell, and Bancroft, and Motley. He could point to Webster of Dartmouth, and Sumner of Harvard, and Grant of West Point, and Garfield of Williams, and Hay of Brown. And if Mr. Curtis were living to-day, what an array of college men would he find laying aside ease and comfort to purify and uplift the life of the nation! They come, a great throng, Jerome from Amherst, and Folk from Vanderbilt, and Fairbanks and Pattison from Ohio Wesleyan, and Beveridge from Depauw, and Reid from Miami, and Knapp from Wesleyan, and Dolliver from West Virginia, and La Follette from Wisconsin, and Shaw from Cornell, and White and Taft from Yale, and Root from Hamilton, and Lodge and Choate and Porter and Roosevelt from Harvard, and many another college man,—men of diverse gifts and ambitions, but men upon whom the hands of God and of the college have been laid, men of character and of

culture, the men who bear in their keeping the destinies of this western world. The men of intellect have likewise proved themselves men of faith, of vision, of daring, and of persistent power.

So shall it be forever! When

> Some great cause, God's new Messiah, offering each the bloom or blight,
> Parts the goats upon the left hand, and the sheep upon the right,

among the patriots who stand out for the defense of all that is holy and true within this dear land, will be found the Christian scholars of the Republic, offering themselves a living sacrifice upon the altars raised for the service of Almighty God. With a lofty patriotism they make their vow to their country:

> Among the nations bright beyond compare,
> What were our lives without thee?
> What all our lives to save thee?
> We reck not what we gave thee,
> We will not dare to doubt thee,
> But ask whatever else, and we will dare.

The knight who spurred out in the verse of Edmund Spenser for the defense of Purity and Innocence, did not pass from the earth when Spenser died. He is still living and setting out upon new quests in this twentieth century. We have been perhaps dazzled for a time by that scientific progress which made Mr. Wallace put the nineteenth century as the equal of all the centuries that had gone before it. The knowledge of nature, the mastery of physical forces has seemed, it may be, to be not only the means but the end of life. But through all recent educational addresses has been sounding a significant note,—the supremacy of character as a preparation for life and as the final object of education, the exaltation of the Bible and of moral ideals, and the inescapable necessity that culture, if it is to be complete, must embrace religion. We are told that there is one college student to every 730 people living in this country. The fact is full of promise, if the character of our colleges be preserved. In these must true learning and true religion be recognized not as foes, but as allies. The religion that separates itself from culture is fanatical or formal; the culture that ignores religion is mutilated. The denominational college, including seventy per cent. of the colleges of the land, is even in this twentieth century not an anachronism. As the State becomes more human and more Christian in its spirit, it gives more and more care to the training of its

youth. But the State, compelled in this land of religious independence to dissociate itself from organized religious bodies, can not so directly, so concretely, so effectively, deal with religious problems and progress as the Church. No one would think of defending in this day a sectarian college, an institution whose chief reason for being is the purpose of making sectarian converts. The Church goes into higher education not for its own sake, but for its students' sake and for the world's sake. In its greater freedom to combine with intellectual training that social spirit which finds its springs in Christian brotherhood, that breadth of interest which characterizes a truly Christian conception of life, that atmosphere which is electric with Christian ideals, that direct and personal evangelistic effort which may lead students to the sources of Christian power, the denominational college has its justification and its pride!

Hail, then, to Wesleyan where, for three-fourths of a century, learning and religion have dwelt so sweetly together,—Wesleyan with its atmosphere of intellectual freedom and religious reverence!

Hail to the men of these days, the peers of those, now seen to be giants, who filled the early days with splendor!

And hail to the men of the future; may they make the later history of this house more glorious than that of its beginnings!

FACULTY
1888

LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

APPENDIX I

COMMITTEES

Committees.

General Committee.

(*Trustees.*)	(*Faculty.*)
Bradford P. Raymond.	Morris B. Crawford.
Charles L. Rockwell.	Herbert W. Conn.
Edmund M. Mills.	William J. James.

(*Alumni.*)

John C. Clark.
Waters B. Day.
Walter B. Wilson.

Committee on Entertainment.

Karl P. Harrington.
William J. James.

Committee on Publications.

William J. James.
Caleb T. Winchester.
Morris B. Crawford.

Committee on Commencement Luncheon.

Walter P. Bradley.
Robert H. Fife, Jr.
George M. Dutcher.
Howard R. Reiter.

Committee on Illumination of Campus.

Walter G. Cady.

Committee on Campus Rally.

WILLIAM B. DAVIS.
KARL P. HARRINGTON.
CLIFFORD L. WAITE.

Committee on Seating, Etc.

CALEB T. WINCHESTER.
MORRIS B. CRAWFORD.
A. C. ARMSTRONG.

Marshal.

A. C. ARMSTRONG.

CIRCULARS, ANNOUNCEMENTS

[*Circular sent to Alumni.*]

Wesleyan University

Committee
on the entertainment of
Commencement Visitors

Middletown, May 15, 1906.

My Dear Sir:

The Committee on Entertainment desires to make as satisfactory arrangements as possible for the accommodation of Commencement visitors. This can be done only in so far as the alumni coöperate by promptly sending information as to their intentions. Inasmuch as, since the burning of North College, many students have taken rooms in private houses, it will be for the advantage of those wishing the most desirable accommodations to apply as soon as possible.

Will you kindly aid the Committee by signifying on the enclosed card whether or not you intend to be present at the seventy-fifth anniversary exercises? If you have already arranged for accommodations, please give the location of your room, as the cards when returned are to be filed and used as a directory.

A small number of rooms will be available in the hotels of the city. For those who may apply, the Committee can secure a limited number of rooms in private houses. The rent of rooms accommodating two persons will average about $2.00 a day. Assignments to rooms will be made in the order of application. It is important, therefore, that applications should be made at an early date, and it is suggested that, as far as possible, two persons arrange to occupy a room together. It is requested that those who secure rooms through the Committee will settle directly with the persons from whom they are rented, as the Committee cannot undertake any financial responsibility in the matter.

The eating clubs of the seven college fraternities will supply meals at reasonable rates to their own alumni. The College Commons will furnish meals to visitors as far as accommodations permit. Meals will be supplied at Webb Hall to women graduates and their friends. The rates charged at the College Commons and at Webb Hall will be $1.00 a day. The hotels and restaurants and a few private families will also furnish board at rates varying from $1.00 to $1.50 a day. In filling out the

enclosed card please indicate the place where you wish to take your meals.

At your earliest convenience after your arrival in Middletown you are requested to register at the Library, where the Committee will establish a Bureau of Information.

The Commencement Luncheon will be open this year to alumni and to officially invited guests only, each alumnus being entitled to one ticket. The accommodations are limited and tickets will be assigned in order of application. Order a ticket now by means of the enclosed card and it will be reserved for you until 9 A. M., Tuesday, June 26. After that hour it will be subject to reassignment. Tickets must be called for in person at the Library.

Your especial attention is called to the enclosed program of exercises and the circular concerning railroad rates.

Fill out the enclosed postal card in full and mail it NOW.

K. P. Harrington,
W. J. James.

[*Private Mailing Card sent with above Circular.*]

I do.....expect to be present during Commencement week, 1906, reaching Middletown on June....., and remaining for.....days. I shall be accompanied by .....

Please reserve.....room for me and secure board for me at ..... [I have already secured a room at .....Street.] Please do.....reserve a luncheon ticket for me until 9 a.m., Tuesday, June 26.

Name,.....Class,

Address, ...

.....

The Committee will endeavor to secure rooms and board but cannot guarantee either.

[*Marshal's Notice.*]

WESLEYAN UNIVERSITY

SEVENTY-FIFTH ANNIVERSARY

MARSHAL'S NOTICE

SUNDAY, JUNE 24, BACCALAUREATE SERVICE.

The Faculty (present and former members), with the Graduating Class, will meet in the Chapel of the Methodist Church at 10 A. M., and pass thence in procession into the church.

WEDNESDAY, JUNE 27, COMMENCEMENT.

1. If the weather permit, the Commencement procession will form at Fisk Hall. For this purpose the Trustees, Faculty (present and former members), Members of the Faculties of Other Institutions, Specially Invited Guests, Candidates for Honorary Degrees, the Men of the Graduating Class, and, in addition, all Alumni will meet at 9.30 A. M. in the following rooms, viz.:

THE TRUSTEES, FACULTY, INVITED GUESTS, AND CANDIDATES FOR HONORARY DEGREES, IN C, FISK HALL (BASEMENT).

THE ALUMNI IN A, FISK HALL (BASEMENT).

THE MEN OF THE GRADUATING CLASS IN B, FISK HALL (BASEMENT).

The Alumnae of Wesleyan University, and the Women of the Graduating Class, will join the procession at the Middlesex, meeting there for this purpose not later than 10 o'clock in rooms 3 and 5 on the ground floor.

2. IN CASE OF RAIN the procession will be formed at the Middlesex. The signal announcing this change of plan will be the tolling of the College bell at 9.30 A. M. In this case, those who would otherwise form in procession at Fisk Hall will assemble, not later than 10 o'clock, at the Middlesex, the Trustees, Faculty, Invited Guests, and Candidates for Honorary Degrees

meeting in Orpheus Hall, and the Alumni and the Men of the Graduating Class in Society Hall, on the third floor of the Middlesex building. Women will meet as indicated under 1.

Academic costume will be worn at Commencement by the Faculty and all Candidates for Degrees. For others it will be appropriate, but not requisite.

Order of Commencement Procession

GRADUATING CLASS.
ALUMNAE.
ALUMNI, Classes 1871-1905, in order of graduation, OLDER Classes leading.
ALUMNI, Classes 1838-1870, in order of graduation, YOUNGER Classes leading.
FACULTY OF WESLEYAN UNIVERSITY (present and former members).
MEMBERS OF THE FACULTIES OF OTHER INSTITUTIONS.
TRUSTEES OF WESLEYAN UNIVERSITY.
SPECIALLY INVITED GUESTS and CANDIDATES FOR HONORARY DEGREES.
SPEAKERS of the day.
PRESIDENT OF WESLEYAN UNIVERSITY.

LIST OF VISITORS

Specially Invited Guests

Reverend CHARLES LEROY GOODELL,
Pastor of Calvary Methodist Episcopal Church, New York, N. Y.

Reverend WILLIAM DOUGLAS MACKENZIE,
President of Hartford Theological Seminary, Hartford, Conn.

Professor HENRY CLAY SHELDON,
Boston University School of Theology, Boston, Mass.

Professor CHARLES MACAULAY STUART,
Garrett Biblical Institute, Evanston, Ill.

Alumni

[This list includes non-graduates, their names being printed with a ‡.]

1841

GEORGE G. REYNOLDS.

1846

FRANCIS T. GARRETTSON.

1847

EDWARD G. ANDREWS.
JOSEPH E. KING.
SILAS W. ROBBINS.

1850

JOHN M. VANVLECK.

1852

THOMPSON H. LANDON.

1854

CALVIN B. FORD.
CYRUS D. FOSS.

1857

WILLIAM T. ELMER.

1858

HENRY A. COLLIN.
DANIEL C. KNOWLES.
‡CHARLES H. STOCKING.

1859

C. COLLARD ADAMS.
STEPHEN B. DAVIS.
WATSON C. SQUIRE.

1860

‡JAMES M. BUCKLEY.
WEBSTER R. WALKLEY.

1861

WILLIAM D. BRIDGE.
ROSWELL S. DOUGLASS.
DANIEL W. RAYMOND.
CHARLES G. R. VINAL.
NATHAN W. WILDER.

1862

WILLIAM P. HUBBARD.

1864

HENRY BAKER.
GEORGE S. BENNETT.
CHARLES H. BUCK.
CHARLES W. CHURCH.
HENRY C. M. INGRAHAM.
GEORGE N. PHELPS.
GEORGE L. THOMPSON.

1865

GEORGE A. GRAVES.
WILLIAM V. KELLEY.
‡JONATHAN B. KILBOURN.
JOSEPH O. MUNSON.
WILLIAM NORTH RICE.
ELIAS B. SANFORD.

1866

‡LOVELL HALL.

Warren L. Hoagland.
Stephen H. Olin.
George C. Round.
Alexander H. Tuttle.
Granville Yager.

1867

Edward Cunningham.

1868

Martin A. Knapp.
Albert J. Nast.
D. Ward Northrop.
Joseph E. Robins.

1869

Alfred Noon.
Henry A. Starks.
Caleb T. Winchester.

1870

Darius Baker.
Isaac N. Clements.
Benjamin Gill.
William A. Johnston.
William H. Peters.
William J. Smith.

1871

Eldon B. Birdsey.
Watson T. Dunmore.
Theodore E. Hancock.
William F. Whitcher.

1872

John A. Cass.
‡Leveret M. Hubbard.
‡Martin V. B. Knox.
F. Mason North.
Charles F. Rice.
‡Lyman E. Rockwell.

1873

Everett O. Fisk.
Benjamin E. Gerst.
Delmar R. Lowell.
Alfred C. True.

1874

Forrest E. Barker.
‡James H. Boucher.
‡Robert A. Carrington.
Morris B. Crawford.
Daniel Dorchester, Jr.
A. Emerson Palmer.
Francis H. Parker.
Wesley U. Pearne.
John C. Welwood.

1875

Leonard L. Beeman.
M. Eugene Culver.

1876

Aldon O. Abbott.
Wilbert C. Blakeman.
Augustus B. Carrington.
George S. Coleman.
Charles E. Davis.
J. Frank Haley.
Frank R. Sherwood.
Phebe A. (Stone) Beeman.

1877

J. Francis Calef.
Henry P. Cooke.
William I. Haven.
Thomas C. Martin.

1878

Clarence E. Bacon.
John S. Camp.
William D. Leonard.

DANIEL L. ROBERTSON.
WILLIAM E. SCOFIELD.

1879

LAHMAN F. BOWER.
ALFRED C. BRUNER.
NELSON EDWARDS.
JOHN GALBRAITH.
HENRY GILDERSLEEVE, JR.
WILBUR F. HAMILTON.
ALBERT MANN.
DANIEL A. MARKHAM.
CAROLINE L. (RICE) CRAWFORD.

1880

ANDREW J. COULTAS, JR.
MARTIN W. GRIFFIN.
ABRAM W. HARRIS.
GEORGE E. METCALF.
ASA H. WILCOX.

1881

THOMAS H. ECKFELDT.
CHARLES L. FOSTER.
FREDERIC A. JACKSON.
WILLIAM A. JONES.
BENJAMIN F. KIDDER.
CHARLES W. MCCORMICK.
WILLIAM E. MEAD.
WILLIAM R. NEWHALL.
‡ROBERT F. RAYMOND.
‡WANTON H. SHERMAN, JR.
SAMUEL D. SHERWOOD.
WILLIS K. STETSON.
‡WILLIAM WILLCOCKS.
CLARA VAN VLECK.

1882

JOSEPH F. DECASTRO.
BRACE M. GALLIEN.
FRANK K. HALLOCK.
KARL P. HARRINGTON.
CHARLES REYNOLDS.
‡CLARA A. PEASE.

1883

‡AARON V. BOWER.
J. FRANCIS COOPER.
ELMER G. DERBY.
WILLIAM J. JAMES.
‡JOSEPH A. RICHARDS.
THOMAS SIMMS.

1884

JOSEPH B. ACKLEY.
DAVID G. DOWNEY.
‡JOHN H. DULANY.
GEORGE M. LAMONTE.
WILLIAM A. RICHARD.
WILLIAM A. TATEUM.
ARTHUR TITCOMB.
ELLA V. BURR.
‡EMELDA (MACMILLAN) RICHARD.

1885

EDWARD D. BASSETT.
FRANK D. BEATTYS.
GEORGE D. BEATTYS.
‡FREDERICK W. CLARK.
SAUL O. CURTICE.
JAMES F. FELLOWS.
‡ABRAM S. KAVANAGH.
OSCAR KUHNS.
WILLIAM H. MITCHELL.
ARTHUR E. SUTHERLAND.
DEWITT B. THOMPSON.

1886

EDWARD L. BLAINE.
GEORGE C. BOSWELL.

Frank R. Bouton.
Walter P. Buck.
Clinton D. Burdick.
Arthur W. Byrt.
Henry F. Clark.
John C. Clark.
William B. Gwinnell.
Charles W. Lyon, Jr.
Winfield S. Manship.
John A. Morse.
John C. Packard.
Edward B. Rosa.
Charles Scott, Jr.
Charles H. Stackpole.
Cyrus J. Strong.
Edward C. Strout.
Bertha Bass.

1887

Edwin Fish.
‡Lyman G. Horton.
Herbert Welch.
‡Ralph M. Wilcox.

1888

Frederick G. Axtell.
Harry H. Beattys.
William E. Bruner.
William M. Cassidy.
Henry P. Griffin.
Frederick H. L. Hammond.
Harry K. Munroe.
Theodore Richards.
W. Barnard Smith.
Aaron L. Treadwell.
Thomas D. Wells.
Marcus White.
Alice M. Hotchkiss.

1889

Edward E. Abercrombie.
Seward V. Coffin.
Frederick M. Davenport.
William B. Eaton.
George W. Gardiner, Jr.
Seymour Landon.
John E. Loveland.
Rowland Miles.
‡Charles W. Stiles.
Charles P. Tinker.
Northam Wright.

1890

Francis A. Bagnall.
Charles E. Barto.
Robert J. Beach.
Edgar S. Fernald.
John M. Harris.
Anna H. Andrews.
Lillie B. (Conn) Kuhns.
‡Nettie L. Whitney.

1891

Waters B. Day.
Ralph B. Hibbard.
John E. Jenkins.
Linnaeus E. La Fétra.
Ludwig A. Lange.
John G. Mitchell.
Eugene A. Noble.
George L. Plimpton.
George H. Rogers.
Arthur W. Smith.
Harry M. Smith.
‡Charles B. Young.
Ellen M. B. Peck.

1892

‡Charles D. Burnes.
David J. Carlough.
Albert L. Crowell.
Frank A. Galloway.
George S. Godard.

HOWARD D. GORDON.
RALPH M. GRANT.
WILLIAM H. HALL.
NELSON C. HUBBARD.
WILLIAM H. KIDD.
WILLIAM F. LITTLE.
ARTHUR B. MILLER.
CLIFFORD I. PARSHLEY.
‡JAMES S. PARSHLEY.
JOHN S. PULLMAN.
ALFRED E. TAYLOR.
LENA M. (ADAMS) RAND.

1893

WINFRED C. AKERS.
‡LELAND M. BURR.
WILLIAM E. FAIRBANK.
CHARLES G. GOODRICH.
WESLEY E. LAKE.
MARTIN O. LEPLEY.
G. ROWLAND MUNROE.
ROBERT C. PARKER.
EDWIN O. SMITH.

1894

J. GORDON BALDWIN.
WILLIAM B. DAVIS.
WILLIAM M. ESTEN.
FREDRIC W. FROST.
LEWIS E. GORDON.
WILLIAM F. GROVES.
‡FRANK M. HORR.
CHARLES H. JUDD.
IRVING A. MEEKER.
FREDERICK H. SAWYER.
JOHN A. THOMPSON.
HENRY A. TIRRELL.
EDWIN C. TREAT.
LIZZIE C. (RICE) BARNES.

1895

SAMUEL LeR. ACKERLY.
JAMES L. BAHRET.
EDWARD F. COFFIN.
JAMES P. ERSKINE.
HENRY I. HARRIMAN.
FRANKLIN T. KURT.
WARREN R. NEFF.
ARTHUR C. POMEROY.
‡ROBERT N. SMITH.
HOWARD A. SUTTON.
CLAUDE L. WILSON.

1896

FRANCIS C. BROWN.
HENRY L. CLEMENTS.
JAMES B. COMINS.
MELROSE D. DAVIES.
‡CHARLES W. HALE.
‡WALTER T. LINDSAY.
IRVING E. MANCHESTER.
THOMAS B. MILLER.
GEORGE M. MOODY.
‡FREDERICK L. PARKER.
JAMES PULLMAN.
HENRY D. TRINKAUS.
ISABELLA J. CHURCH.
EDITH R. (GRAVES) HARRIMAN.
MARY A. McKAY.
FRANCES B. (PETTY) MANSHIP.
MARGARET N. (WILLIAMS) BELDEN.

1897

MANNING B. BENNETT.
R. NELSON BENNETT.
N. EVAN DAVIS.
WILLIAM G. GIFFIN.
WHITNEY M. HUBBARD.
ALVENZA I. SMITH.
MINNIE R. SNOW.
CORNELIA H. STONE.
MARY L. WESTGATE.

ELIZABETH (WILLIAMS) TOWER.
ELIZABETH C. WRIGHT.
CARRIE M. YALE.

1898

FRED I. BROWN.
J. HOWARD FAIRCHILD.
HAROLD HASTINGS.
EBEN JACKSON.
ROBERT T. JONES.
ROBERT D. MILNER.
EDWARD L. MONTGOMERY.
ADOLPHUS S. NORTH.
SAMUEL QUICKMIRE.
GEORGE D. ROBINS.
RALPH D. WHITING.
ARCHER E. YOUNG.
MARY (NORTHROP) BURDICK.
ZULA E. ROGERS.
ISABEL M. WALBRIDGE.

1899

MARCELLUS C. AVERY.
ARTHUR H. BURDICK.
ROBERT E. HARNED.
PERRY C. HILL.
ALBERT E. LEGG.
WILLIAM H. LESLIE.
WILLIAM E. PARKER.
WARD W. PICKARD.
ERNEST M. QUITTMEYER.
CHARLES H. RAYMOND.
ALFRED E. ROBERTS.
‡BURTON C. ROGERS.
WARREN F. SHELDON.
NEWTON G. WRIGHT.
OLIVER E. YALE.
FLORENCE E. (BARRACLOUGH) QUICKMIRE.
ADELLA W. BATES.
JULIA BRAZOS.

1900

‡CURTISS S. BACON.
HARRY T. BAKER.
HORACE D. BYRNES.
CHARLES H. DAVIS.
H. LORANUS DAVIS.
LEROY A. HOWLAND.
CHARLES E. JOHNSTON.
EDWARD MCMILLEN.
RALPH W. RYMER.
ISAAC C. SUTTON.
WINTHROP TIRRELL.
PAYSON J. TREAT.
EMORY H. WESTLAKE.
ANNIE G. (BIRDSEY) STEELE.
DORA I. (BLACKMAN) MCMILLEN.
ALICE BRIGHAM.

1901

WILLIAM E. ADAMS.
WALTER M. ANDERSON.
GEORGE E. BISHOP.
BURTON H. CAMP.
ALBERT L. COOPER.
JOHN A. DECKER, JR.
HARRIMAN C. DODD.
‡ARCHIBALD ST. J. DOWNEY.
ROY H. JONES.
‡HARRY C. LANE.
LESTER E. LYNDE.
ARTHUR J. MEREDITH.
ROBERT J. MERRIAM.
W. PERCIVAL OGDEN.
DUDLEY B. PALMER.
WALTER J. RANDOLPH.
WALTER R. TERRY.
SUSAN M. ADAMS.
MABELLE W. BARNES.
ANNIE S. BROWN.
MARIE R. HUBERT.

EDITH L. RISLEY.
J. MYRA WILCOX.

1902

ROBERT A. ANDERSON.
BURTON J. BALDWIN.
JOHN M. BETTS.
MARSHALL BEVIN.
W. HARRY CLEMONS.
‡LOUIS DENNISTON.
ALEXANDER J. INGLIS.
MICHAEL G. LAWTON.
ERNEST M. LIBBY.
FREDERICK M. MCGAW.
THOMAS H. MONTGOMERY.
JAMES W. MUDGE.
CARL S. NEUMANN.
ROBERT B. NEWELL.
CLARENCE L. NEWTON.
WILBER E. NEWTON.
HARRIE A. PRATT.
CARL F. PRICE.
GEORGE D. RYDER.
HUBERT N. TERRELL.
EVERETT L. THORNDIKE.
ALICE L. ADAMS.
ELDORA J. BIRCH.
ALICE W. ENGLISH.
MABELLE C.(GRANT)MEEKER.
JESSIE M. (WINANS) BETTS.

1903

ARLON T. ADAMS.
IRVING M. ANDERSON.
JAMES G. BAGG.
JAMES H. BAKER.
ROBERT A. BARTLETT.
Z. PLATT BENNETT.
JAMES G. BERRIEN.
WALTER G. BROWN.
OTTO A. BUSHNELL.
WILLIAM P. CALDER.
‡PAUL F. CANFIELD.
‡FRED E. CLERK.
CLARENCE F. CORNER.
HOWARD D. CRANE.
MILTON W. DAVENPORT.
HARRY P. DAY.
RIDGWAY B. ESPY.
‡CLIFTON F. GARDNER.
PERRY S. HOWE.
MAX F. HOWLAND.
WILLIAM S. JACKSON.
JOHN W. LANGDALE.
RALPH C. LATHROP.
FLOYD S. LEACH.
HARRY W. LITTLE.
GEORGE H. MCGAW.
WILLIAM E. H. MATHISON.
‡JAMES I. MERRITT.
RALPH NORTON.
JESSE L. PARKER.
FLETCHER H. PARSONS.
WALLACE L. ROOT.
HERBERT B. SHONK.
HARRY H. SMITH.
JAMES R. VEITCH.
GEORGE M. WARNER.
MYRON J. WILLSON.
MARY E. BAGG.
ZELIA A. CUTLER.
‡RENA C. (GLADDING) PRATT.
MINNIE C. RIGBY.

1904

ROLAND J. BUNTEN.
MYRON C. CRAMER.
LOUIS D. DAY.
GERALD B. DEMAREST.
FRANK P. FLETCHER.
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1905

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Alumni, not Bachelors of Wesleyan University.

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OWEN VINCENT COFFIN (LL.D., 1895).
ALICE BAKER GUY (M.S., 1902).

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JUNE, 1906

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The term of office is five years, the official year beginning on the Monday preceding the annual Commencement.

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Professor of Chemistry.

FACULTY
1906

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CLARENCE FREDERIC HALE, B.S.,
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ERWIN STANLEY FULTON, B.S.,
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JUNE 27, 1906

Degrees

The following degrees were conferred in course:

The Degree of Bachelor of Science on:

RAYMOND WOLCOTT BRISTOL.
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HENRY GONSALVES.
WILLIAM HENRY LONG.
LAURENCE FREE MCDONALD.
HAROLD CLIFTON MARTIN.
ARTHUR JAMES MONROE.
OLIVER TAYLOR NOON.
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JOSHUA LESTER ROBINS.
FERDINAND RICHARD STREBER.
CLIFFORD LE GRANDE WAITE.
ERNEST BURR WHEELER.

DAISY HELENA LOHR.

The Degree of Bachelor of Philosophy on:

HAROLD DEFOREST ARNOLD.
CHARLES WOODARD ATWATER.
WILBUR STONE BEEMAN.
GEORGE IMLAY BODINE, JR.
ARTHUR KENT DEARBORN.
WARD PERCY GAMMONS.
GORDON GRAY GATCH.
ROBERT GRAY GOODMAN.
GEORGE HENRY HAMILTON.
IRA PROUTY INGRAHAM.
WILLIAM ARMOUR JOHNSTON, JR.
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DWIGHT MILTON SAWYER.
LESTER REUBEN WEEKS.
JAMES AUGUSTUS WILSON.

ALICE GERTRUDE COOKE.
HELEN KATHERINE FLETCHER.
JESSIE LOUISE KEENE.
KATHERINE FRANCES LUCEY.
EDITH WEEKES SAY.
ANNA MADELINE VANDERBROUK.
ELIZABETH MATILDA VEAZEY.
ELLA PARDEE WARNER.
FLORENCE WINTER.

The Degree of Bachelor of Arts on:

ARTHUR RAY ANDERSON.
WILLIAM EBENEZER BELL.
EARL MALTBY BENSON.
SAMUEL CURTIS CAMPAIGNE.
THERON ALVORD CLEMENTS.
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GEORGE WOOD VINAL.
FREDERICK FRANKLIN VOORHEES.
FREDERICK WARREN WRIGHT.
MARGARET ELIZABETH DONAHOE.
FAYE MILDRED KEENE.

The Degree of Master of Science on:

MRS. LUCIA WASHBURN (HAZEN) WEBSTER, B.A.,
Mt. Holyoke College, 1902.

The Degree of Master of Arts on:

GEORGE ELLSWORTH BISHOP, B.A., 1901.
FRANK PEARL FLETCHER, B.A., 1904.

Honorary Degrees

The following honorary degrees were conferred:

The Degree of Master of Arts on:

ALONZO HOWARD CLARK,
Smithsonian Institution, Washington, D. C.

ABRAM SHECKLETON KAVANAGH,
Superintendent of the Methodist Episcopal Hospital, Brooklyn, N. Y.

ROBERT FULTON RAYMOND,
New Bedford, Mass.

The Degree of Doctor of Divinity on:

ARTHUR WILLIAM BYRT,
Superintendent and Corresponding Secretary of the Brooklyn Church Society, Brooklyn, N. Y.

NATHANIEL WALLING CLARK,
Presiding Elder, Italy Conference of the Methodist Episcopal Church, Rome, Italy.

ANDREW JACKSON COULTAS, JR.,
Presiding Elder of the Providence District, New England Southern Conference of the Methodist Episcopal Church, Providence, R. I.

JOHN GALBRAITH,
Presiding Elder of the Boston District, New England Conference of the Methodist Episcopal Church, Dorchester, Mass.

CHARLES LE ROY GOODELL,
Pastor of Calvary Methodist Episcopal Church, New York, N. Y.

THOMPSON HOADLEY LANPON,
Principal of Bordentown Military Institute, Bordentown, N. J.

WILLIAM DOUGLAS MACKENZIE,
President of Hartford Theological Seminary, Hartford, Conn.

ALBERT JULIUS NAST,
Editor of *Der Christliche Apologete,* Cincinnati, O.

HENRY CLAY SHELDON,
Professor of Systematic Theology, Boston University, Boston, Mass.

CHARLES MACAULAY STUART,
Professor of Sacred Rhetoric, Garrett Biblical Institute, Evanston, Ill.

ALEXANDER HARRISON TUTTLE,
Pastor of the Methodist Episcopal Church, Summit, N. J.

The Degree of Doctor of Science on:

EDWARD BENNETT ROSA,
Physicist of the National Bureau of Standards, Washington, D. C.

CHARLES WARDELL STILES,
Chief of the Division of Medical Zoölogy, United States Public Health and Marine Hospital Service, Washington, D. C.

ALFRED CHARLES TRUE,
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Justice of the Supreme Court of the State of New York, Rochester, N. Y.

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APPENDIX II

NEW BUILDINGS

WILLBUR FISK HALL

LIBRARY
OF THE
UNIVERSITY
OF

WILLBUR FISK HALL

LIBRARY OF THE UNIVERSITY OF CALIFORNIA

Willbur Fisk Hall

The laying of the corner-stone of Willbur Fisk Hall was conducted informally at 2 P. M., Saturday, February 21, 1903. After a few appropriate remarks, President Bradford P. Raymond deposited a sealed metal box in the cavity made for it in the corner-stone, and then proceeded to lay the stone.

On Tuesday afternoon, June 28, 1904, Fisk Hall was formally dedicated. The exercises were brief and simple. Bishop Cyrus D. Foss, '54, read from the Bible and offered prayer. H. C. M. Ingraham, '64, President of the Board of Trustees, presented the keys of the building to President Raymond, who, in accepting the charge, thanked the alumni and others who had aided in the erection of the new hall. After the exercises the building was thrown open for inspection.

Fisk Hall, of which a picture is shown opposite, is occupied by the Departments of Language, Literature, History, Economics and Philosophy. The building is of Portland brownstone, 113 by 62 feet in dimensions, three stories in height above a lofty and well-lighted basement story. It contains ten private studies for professors in charge of departments, fourteen lecture rooms, seven commodious seminary rooms, and a well-appointed psychological laboratory.

In the planning and construction of the building, careful attention was paid to matters of heating, lighting, ventilation and drainage. It is believed that in dignity of external appearance, interior finish, convenience of arrangement, and adaptation at all points to the uses for which it is designed, it is a model college building.

The architects were Cady, Berg & See, of New York City. The cost of the building was one hundred and fourteen thousand dollars.

JOHN BELL SCOTT MEMORIAL

UNIVERSITY
OF
CALIFORNIA

JOHN BELL SCOTT MEMORIAL

Dedication of the John Bell Scott Memorial

The John Bell Scott Memorial is a Physical Laboratory. It was the gift of the late Charles Scott, of Philadelphia, and of his son, Charles Scott, of the Class of 1886, in memory of John Bell Scott, of the Class of 1881, who died of disease contracted while serving as Chaplain of the United States Cruiser *St. Paul* during the Spanish-American War.

The corner-stone of the building was laid June 30, 1903, by Mr. Charles Scott, '86. The dedication occurred December 7. 1904.

The dedication exercises were held partly in Memorial Chapel and partly in the Scott Laboratory. At 2.30 P. M. a large audience gathered in Memorial Chapel to hear the address of Professor Edward B. Rosa, Ph.D., '86, Physicist of the National Bureau of Standards, of Washington, D. C. The introductory services consisted of the reading of the 28th chapter of Job, and prayer, by the Reverend David G. Downey, D.D., '84, and the singing of the following hymn, written for the occasion by Louis J. Magee, '85:

Through Nature's realm, o'er sea and land,
We own a force divine;
The working of an unseen hand,
A Master's wise design.

All-knowing Spirit, in whose sight
Our mysteries are plain,
Hasten the march of Truth; give light
Where Science gropes in vain.

Reveal thy plan, inspire our quest,
Lead on where we explore.
Fresh wonders yet make manifest
From out thy secret store.

We sound the depths, we search the way,
And probe for hidden cause;
In human boldness we essay
To formulate thy laws.

Old thought to new may yield its place,
Our systems rise and fall;
Strengthen the Faith that still can trace
Unchanging Love through all.

The subject of Professor Rosa's address was, "The National Bureau of Standards, and its Relation to Scientific and Technical Laboratories." The text of the address, as also of the other addresses delivered on this occasion, is given below. After the address, the Trustees, Faculty, and invited guests adjourned to the main lecture-room of the Scott Laboratory. Here Mr. Henry C. M. Ingraham, '64, Chairman of the Building Committee, delivered an address, presenting the building on behalf of Mr. Scott and the Building Committee, and President Bradford P. Raymond spoke in response. After the conclusion of President Raymond's address, the following hymn, first sung at the dedication of Judd Hall, and written for that occasion by Professor C. T. Winchester, was sung under the leadership of the college Glee Club:

The Lord our God alone is strong;
His hands build not for one brief day;
His wondrous works, through ages long,
His wisdom and his power display.

His mountains lift their solemn forms;
To watch in silence o'er the land;
The rolling ocean, rocked with storms,
Sleeps in the hollow of his hand.

Beyond the heavens he sits alone,
The universe obeys his nod;
The lightning-rifts disclose his throne,
And thunders voice the name of God.

Thou sovereign God, receive this gift
Thy willing servants offer thee;
Accept the prayers that thousands lift,
And let these halls thy temple be.

And let those learn, who here shall meet,
True wisdom is with reverence crowned,
And Science walks with humble feet
To seek the God that Faith hath found.

The exercises closed with the reading of Prov. iii, 13-23, and a prayer of dedication, by Bishop Edward G. Andrews, LL.D., '47.

After the dedication, an informal reception was held in one of the large rooms on the third floor, and the building was thrown open for inspection.

The John Bell Scott Memorial, of which a picture is shown facing page 179, is constructed of Harvard brick and Indiana limestone. Its main part has a front of 102 feet and a depth of 51 feet, and in the rear is an extension of 50 x 30 feet. The building consists of basement, three stories and attic, except that the third story is omitted in the extension, over the main lecture room, the latter being situated on the second floor, its ceiling being carried up higher than those of the other rooms on the same floor. This lecture room is about 44 x 40 x 17 feet in size, and contains nearly 200 seats. A smaller lecture room on the third floor seats about 40 persons. The building contains 22 rooms for experimental work, elementary and advanced, in addition to lecture and apparatus rooms, photographic dark rooms, store-rooms, offices, a library and a room for draughting and computing. There is also a tower 4 x 6 feet in cross section, with a height of 54 feet in the clear, which can be used for experiments requiring great vertical extension.

The building is abundantly supplied with water and gas connections throughout, and is also equipped with an exceptionally extensive and complete system of wiring for the purpose of distributing to all points, for experimental use, alternating and direct currents from the city mains, as well as current from the storage batteries in the basement. For the most part the interior is finished with exposed brick walls, painted a light tint, and with exposed floor timbers and pipe work.

The building was designed by Mr. Charles A. Rich, of New York City. Its cost amounted to one hundred and eighteen thousand dollars.

ADDRESS

By Professor Edward B. Rosa, Ph.D.

The National Bureau of Standards and its relation to Scientific and Technical Laboratories

THE dedication of a large and well-appointed building, to be devoted exclusively to instruction and research in physics, is a notable event in the history of a college. In this instance it is the realization of a hope long cherished by many, and by none more than by the present speaker. That so splendid a building has been deemed necessary for the work to be done in physics suggests two things. First, the high standard which Wesleyan is setting for herself in this as in other departments of work, and second, the rapid development which has occurred in recent years in physics, rendering imperative an equipment for experimental work of an entirely different order of magnitude from that thought sufficient a generation ago. So great has been the demand for the best instruments and standards to be used in experimental work, both in pure and applied physics, that the government has been led to establish at Washington a national laboratory, one of whose functions is to coöperate with scientific and technical institutions and manufacturers in the work of improving instruments and standards, and developing methods of measurement. It, therefore, seems not inappropriate that something be said on this occasion concerning this work of the national government, so recently inaugurated as not to be generally known.

The Bureau of Standards was established by Act of Congress, in response to a demand for such an institution on the part of many scientists, engineers, manufacturers and representatives of the national government. The high order of accuracy demanded in modern engineering practice and in scientific research made it necessary that manufacturers of scientific and engineering instruments should possess correct standards of length, mass and

volume, as well as electrical, optical and thermometric standards, and be able to have them reverified from time to time. It was also important that anyone engaged in scientific or engineering work could have his instruments and standards tested whenever necessary. The Office of Weights and Measures, at Washington, had been equipped to do some of the work required in the verification of length, mass and volume for many years, but it was necessary to send electrical standards, thermometers and pyrometers, and many other kinds of apparatus to Europe to be tested when results of the highest accuracy were desired. As this was both expensive and time-consuming, the consequence was that only infrequently were these more accurate tests obtained. The United States held a creditable position among the nations of the earth in physical science and possessed some of the best physical laboratories in the world; it was leading the world in the manufacture of electrical machinery and some kinds of electrical instruments. To be obliged to ask the German Imperial or other foreign laboratories to do our testing for us, because we lacked a well-equipped national laboratory for doing such work, was clearly a situation that ought to be corrected, and Congress acted promptly when the importance of the matter was brought to its attention. Appropriations were made for laboratory buildings and equipment, and for a director and a small scientific staff, and the Bureau began its work July 1, 1901. President McKinley appointed as director, Professor S. W. Stratton, of Chicago University, to whom, more than to anyone else, is due the credit for the establishment and the success of the Bureau. A careful study of the Physikalisch-Technische Reichsanstalt and of other European laboratories was made in connection with the designing of the laboratory buildings and the selection of the equipment, and many valuable suggestions were derived therefrom. The laboratories have, however, been constructed after American rather than European models, although in their equipment it has been found necessary to draw very heavily upon European instrument makers.

The Bureau began its work in temporary quarters and has been developing methods, building and acquiring apparatus, and doing testing for the government and the public, while the laboratory buildings have been under construction. The larger of the two buildings was only recently completed and the Bureau is just

now moving into it, the first building having been occupied nearly a year ago. We now find ourselves, about three and a half years from the organization of the Bureau, in possession of buildings and equipment costing about $600,000, with a personnel carefully selected through the civil service and numbering altogether seventy-one, maintained by annual appropriations amounting to nearly $200,000, and, judged by the magnitude and importance of the output of testing and investigations, ranking second only to the great German Reichsanstalt among the government laboratories of the world doing this kind of work.

After this brief epitome of the history of the Bureau, let me state more particularly something of its work and of its relation to the scientific and technical laboratories of the country. The work of the Bureau may be briefly specified under three separate heads as follows:

1. To acquire and preserve standards of measure and to certify copies of the same, and to test and investigate measuring instruments and to determine the properties of materials.

2. To conduct researches and to investigate and develop methods of measurement; to improve instruments and apparatus for physical measurements and to devise apparatus, especially for use in testing and in precise measurements.

3. To distribute information regarding instruments and standards to manufacturers, state and city sealers of weights and measures, scientific and technical laboratories, and to any and everyone applying for such information.

These three functions of the Bureau are closely interdependent. To acquire a standard in some cases involves an elaborate investigation and the independent determination of the value of the standard: and to preserve it may involve subsequent redeterminations of its value to ascertain whether any change has occurred. A new kind of test often involves the investigation of methods of measurement, or the determination of new standards, or the construction of a new instrument. Thus, research and testing are intimately connected in most of the work of the Bureau.

The distribution of information, the third function of the Bureau of Standards, is accomplished through correspondence and the circulars and bulletins issued by the Bureau, and also by the personal visits of people seeking such information.

The three fundamental standards of measure for physical quantities are those of length, mass and time. The oldest of these is the unit of time, the second. This ancient unit has successfully withstood every attempt to replace it by a decimal sub-multiple of the day. The earth itself is our fundamental timepiece, every revolution upon its axis counting off 86,400 sidereal seconds, from which we immediately derive our standard second. No clock is so perfect a timepiece as the earth, and all the standard clocks in the world are corrected by it. What the astronomer does in determining the time by astronomical observation, is to read off the time of day or night by means of a telescope on the starry face of the celestial clock. The telescope corresponds to the hour hand of a 24-hour dial (there is no minute hand), and the stars mark the sub-divisions of the dial. The best made clocks of human invention go fast or slow by at least some fraction of a second each day, but there is no proof to show that the terrestrial clock deviates by so much in a thousand years. Thus the unit of time is a natural unit, easily obtained direct from nature and universally employed the world over. The Bureau of Standards does not intend to make independent time observations, but will correct its standard clocks from the observations made at the neighboring Naval Observatory.

The unit of length has a very different history. The foot has been the most widely used measure of length, both in ancient and modern times. It was derived, as the name suggests, from the length of the human foot, and is thus a natural unit like the second; but, owing to the multiplicity of human feet and their varying dimensions, this unit has varied greatly in different countries and in different ages, its length ranging all the way from the ancient Welsh foot of 9 inches to the Piedmont foot of 20 inches. In modern times it has varied from the Spanish foot of less than eleven inches to the Venice foot of over 13 inches, almost every country using a foot of different length. The confusion resulting from this lack of uniformity prompted the French in 1799 to adopt a new unit of length; and remembering how surely and elegantly the unit of time is fixed by the rotasions of the earth, they sought to make the meter, the new standard of length, permanent and inflexible, by basing it upon the dimensions of the earth. The meter was chosen to be one ten-millionth part of the distance from the equator to the pole of the earth at

a particular meridian, and was fixed in concrete form as the length of a platinum bar, which bar has since been carefully preserved in Paris. Subsequent and more accurate measurements have given a slightly different value for the circumference of the earth, so that the meter is known not to be as originally intended, just one ten-millionth of that particular quadrant of the earth's circumference. The meter, has, however, not been changed, its value being fixed by the length of the platinum standard and not by the earth. Thus the platinum bar has become the primary standard of length, instead of a secondary standard as was originally intended. This is a happy result, for the difficulty of comparing a meter with the dimensions of the earth is too great to make the latter of any value as a standard of length. The original standard meter has been reproduced many times in platinum and iridio-platinum, and many of the civilized nations of the earth possess such duplicates. We have two of them at the Bureau of Standards in Washington, one of which was recently taken to Paris by Mr. Fischer, and re-compared with the standard of the International Bureau. The results showed almost perfect agreement with the comparison made 15 years previously, the difference, if any, being not greater than about 0.5 of a micron, that is $\frac{1}{50000}$ inch. This is one part in 2,000,000 of the length of the bar, and represents about the limit of accuracy obtainable in comparisons of this nature, although the computed probable error of the observations was only .02 of one micron, or less than a millionth of an inch.

The third fundamental unit, that of mass, has likewise varied in different countries and in different ages. The most widely used unit was the pound, and before the metric system came into use there were hundreds of different pounds in use in Europe, differing from country to country, and from province to province, and varying also according to the commodity to be measured. The ancient Roman pound was equivalent to a little less than 12 of our avoirdupois ounces, and from it were derived the various Italian pounds, varying in value from the Venice light pound, equivalent to about eleven of our avoirdupois ounces, and the Naples silk-pound and the Milan pound of about twelve ounces, to the Piedmont pound of about thirteen ounces and the Venice heavy pound of about seventeen ounces. There were silk pounds, and chocolate pounds, and table pounds, and goldsmith pounds,

and medicinal pounds; there were light pounds, and heavy pounds, and half-heavy pounds, and extra-heavy pounds. There were pounds of 12, 14, 15, 16, 17, 18, 20, 21, 22, 24, 28, 30 and 36 ounces, and the ounces had varying value in different countries and in different provinces of the same country.

To remedy this distressing confusion the French, in 1799, at the same time the meter was chosen, adopted the kilogram as the unit of mass, fixing it concretely in a cylindrical mass of platinum, which was intended to be equal to the mass of a cubic decimeter of water at the temperature of its maximum density. This, like the meter, was designed to be a natural unit that could be derived originally at any subsequent time and in any country. But, as in the case of the meter, later determinations showed that the kilogram was not, as was intended, exactly equal to the mass of a cubic decimeter of water, and hence the platinum secondary standard was adopted as a primary standard of mass, and no further attempt was made to make it a natural unit. All other countries using the metric system use carefully constructed copies of this original kilogram as their standard of mass. The process of weighing is even more accurate than the comparison of lengths, so that the standard kilograms of the various countries of the world are practically perfect duplicates of the original and of each other.

In 1875 a conference of the representatives of seventeen nations was held in Paris, and a permanent International Bureau of Weights and Measures was established and is still maintained. It is located at Sevres, near Paris, and is supported jointly by the participating nations. Its duties are to care for the fundamental standards of length and mass, to furnish accurately adjusted copies of the same, and to compare standards which may be returned from time to time. (Some other testing is done, particularly the calibration of thermometers.) The work is of the highest order of accuracy, and leaves little to be desired so far as standards of length and mass are concerned. Testing is done, however, only for the governments, not for private individuals or institutions.

The metric system has been adopted by nearly all the civilized nations of the world, excepting Great Britain and her colonies and the United States, and is universally used throughout the world for scientific purposes. Electrical units are all based on

the metric system, and hence electrical engineers employ the metric system almost exclusively, even in this country. The gain to science and commerce which resulted from the general adoption of the metric system in Continental Europe can scarcely be overestimated, and it is to be hoped that it will be soon adopted also by the English-speaking countries of the world.

The avoirdupois standard for the United States was defined in 1830 as $\frac{7000}{7717}$ of the Troy standard pound of the mint, which, in turn, was a copy of the British Troy pound, derived from the standard of Queen Elizabeth made in 1588. The latter was derived from the standard of Edward III, and this is said to have come from the city of Troyes, France, hence the name, Troy pound. The metric system was legalized in the United States in 1866, and the meter was declared to be equivalent to 39.37 inches and the kilogram to 2.204 pounds. (The International Bureau began its work in 1880.) The iridio-platinum prototypes of the metric standards were received in this country in 1889. These were so much superior as standards to the brass standard pound and the bronze yard, that in 1893 the metric standards were adopted as fundamental by the United States, and the pound and yard were defined in terms of them. Thus the metric system is not only legalized in this country, but our fundamental standards are the meter and the kilogram, and all our weights and measures are derived from these metric standards, using the legal equivalents.

Few people, perhaps, realize how needlessly complex our system of weights and measures really is. Instead of a single unit of weight and of length with multiples and sub-multiples having ratios of ten, and a unit of volume simply related to the unit of length, as is the case in the metric system, we have a multiplicity of units and all kinds of odd ratios for the multiples and sub-multiples. I beg your indulgence for a moment to remind you of some of the absurdities of our system. But first recall how much simpler and more convenient our decimal coinage is than the English coinage. Nothing could be simpler than the expression of values in dollars and cents; the use of pounds, shillings and pence, to say nothing of guineas, crowns and farthings with their odd ratios being cumbersome in comparison. But our weights and measures are far more cumbersome and complicated than the English coinage. We weigh most merchandise by avoir-

dupois weight, gold and silver by Troy weight, medicines by apothecaries' weight, diamonds by diamond carat weight. We have dry quarts and liquid quarts, long tons and short tons, and a hundred-weight is not 100, but 112 pounds. Coal is usually sold at wholesale by the long ton and retailed by the short ton. A bushel sometimes means 2150.4 cubic inches and sometimes it means a certain number of pounds weight of a commodity. The American bushel is derived from the old English Winchester bushel, but the legal English bushel of the present day is smaller by 32 cubic inches. On the contrary, the English gallon is much larger than the American gallon, the difference amounting to about 20 per cent. We measure wood by the cord, stone and earth by the perch, or the cubic yard. Moreover, among the different states of the Union are considerable differences in custom and in legal equivalents. We are, of course, much better off than were the countries of Europe a century ago, but the difference is all too small.

Our medieval system of weights and measures is, however, too deeply rooted to be easily displaced. But the metric system is being used in this country more than is generally realized, and our rapidly growing foreign trade is bringing it more than ever to the attention of merchants and manufacturers. In England a strong effort is being made to introduce the metric system, with the hope that ultimately a decimal system of currency may also be adopted. The English colonies are even more progressive in the matter than the mother country, and strong influences are at work to secure the adoption of the decimal system throughout the British Empire. It will be greatly to the advantage of the United States to keep abreast of this movement, and not to be the last among the civilized nations of the world to throw off the incubus of an incoherent system of weights and measures, whose only claim to continuance lies in the fact that it is now in general use.

The testing of lengths and masses constitutes one of the most important branches of the work of the Bureau. As I have said, this work has been done by the government for many years, but the facilities for this kind of testing are now being immensely improved so as to extend the range and increase the accuracy of the work. The new laboratories will contain many new balances and comparators, and every precaution is being taken to secure the most favorable conditions possible for precision work. When the installation is completed it will probably be the best of the kind in the world.

I have said that the three fundamental units of measure are those of length, mass and time, or the meter, kilogram, and second. From these are systematically derived various other units, all forming what is generally called the centimeter-gram-second system, or more briefly, the c. g. s. system. It is not my purpose to enumerate the various derived units which are employed in scientific and technical work, but rather to describe briefly some of those employed in the testing and research work of the Bureau of Standards. And first let me speak of the work in heat and thermometry. The testing of thermometers is one of the most important branches of our work, and is under the charge of Dr. Charles W. Waidner, who is personally known to some of you. Dr. Waidner and his assistants have devoted a great deal of effort to the acquisition of reliable standard thermometers and to the investigation of instruments and methods. In this they have availed themselves of the results of the magnificent work that has been done in this field in Europe, more especially at the International Bureau and the Reichsanstalt, and by the thermometer-makers of France and Germany. For our present purpose thermometers may be conveniently grouped as follows: First, precision mercury thermometers, to be used as standards or for scientific purposes. They are calibrated very elaborately and are capable of high accuracy. Second, ordinary mercury thermometers and clinical thermometers. The Bureau tests clinical thermometers by the thousand, and we hope that before long they will come to us by the tens of thousands. (The fee is only 12½ cents each when done in quantity, 25 cents for a single one.) Clinical thermometers often change if graduated new, and hence they ought always to be aged, tested and certified to insure their accuracy. Third, high temperature mercury thermometers of hard glass, with nitrogen under pressure above the mercury column, reading up to 550° C. (or about 1,000° F.). Fourth, platinum resistance thermometers, thermocouples and other forms of pyrometers suitable for measuring furnace temperatures up to about 1,600° C. (or 2,900° F.). Such instruments are used in many manufacturing processes as well as in research problems, and hence are found both in scientific and technical laboratories. Fifth, optical pyrometers for measuring the temperature of the hottest furnaces and, approximately, even the temperature of the electric arc, the highest temperature attainable

by any known means, namely, about 3,700° C. (or about 6,700° F.). An investigation on this subject at the Bureau has recently been published by Drs. Waidner and Burgess. Sixth, low temperature thermometers for temperature below the freezing point of mercury, even down to the temperatures of liquid air and of liquid or solid hydrogen. Such thermometers use pentane or toluene; or a copper-constantan thermocouple is employed. For the very lowest temperatures helium gas is used, helium being the only gas not liquified at the temperature of solid hydrogen, namely, about 16° above absolute zero, or 257° C. (or 430° F.) below the freezing point of water.

From the temperature of solid hydrogen to that of the electric arc is a wide range indeed, and a very considerable equipment of apparatus and machinery is necessary to produce and to measure any temperature throughout this range. For the higher temperatures gas and electric furnaces are required. For the lower temperatures a refrigerating plant and apparatus for liquefying carbon dioxide, air and hydrogen are required. The Bureau has recently purchased the low temperature plant which was operated as an exhibit by the British Government at the St. Louis Exposition. This was one of the most interesting exhibits of the entire World's Fair. Liquid hydrogen was produced in larger quantity by this plant than had ever been done before, more being made and used in public demonstrations during the season than the total amount that has been produced since hydrogen was first liquefied. Solid hydrogen is also produced by the apparatus.

The optical work of the Bureau is not so fully established as the work in weights and measures, and heat and thermometry, but three well-trained specialists are devoting themselves to it and a fourth is soon to be appointed. The work of research and testing in this section, which has been taken up or is soon to be begun, includes the investigation of the optical properties of instruments and of materials; the application of interference and other optical methods to linear and angular measurements; the investigation of the spectra of vacuum tubes and other phenomena in connection with the passage of electricity through gases at reduced pressure; and the investigation of questions connected with the polariscope analysis of sugar and the testing of polariscopes.

The latter subject is of special importance on account of the use of polariscopes in determining the duty on sugar imported into the United States. The Bureau has undertaken, at the request of the Treasury Department, to supervise the work of polariscopic analysis of sugar in all the custom houses of the country. Sugar is the chief source of revenue among articles imported, the duties collected by the Government amounting to over $60,000,000 per annum. The duty on each importation is determined by the angle through which a beam of polarized light is rotated when passed through a solution of a sample of sugar, the percentage of pure sugar being shown by a specially prepared table when the angle of rotation has been determined. For some years a difference has existed between the experts of the government and those employed by the sugar interest as to the effect of temperature upon the indications of the polariscope, and, although the difference is only a fraction of one per cent., it amounts to a large sum when applied to the hundreds of millions of dollars paid in duty during the last few years. The question is being contested in the courts, and in the meantime the Bureau is making some careful investigations on the subject in the interest of the government.

Another line of the Bureau's work not yet fully established is the testing of gas and water meters, pressure gauges and manometers for high and low pressures, engine indicators, and the determination of the strengths of materials, including cements and other building materials. This will probably develop into a very important branch of our work, in which we can be of much service to scientific and technical laboratories, as well as to the government and the public.

The official testing of scales, measures of length and volume, gas, water and electricity meters, and other instruments by which the commodities purchased by the people are measured, is not done in this country as thoroughly as it ought to be. In very few cities do the sealers of weights and measures go about systematically testing the instruments employed for measuring merchandise. England surpasses us in looking after the interests of the people in this particular. One of the functions of the Bureau is to educate the public to the importance of this work. A step in this direction is the National Convention of Sealers of Weights and Measures to meet next month in Washington, in response to a call issued by the Bureau of Standards.

The various lines of testing and research which so far have been mentioned, namely, weights and measures, heat and thermometry, light and optical instruments, and engineering instruments, are included in the first division of the work of the Bureau of Standards. The second division includes electricity and photometry. In the early days of its development electricity was essentially a qualitative science; its modern history has seen it become distinctly quantitative, and its wonderful development has been largely, if not mainly, due to the use of measuring instruments in studying and applying it. The three fundamental units of measure are the ohm, the unit of resistance; the ampere, the unit of current; and the volt, the unit of electromotive force. These are so related by Ohm's law that when two are defined the third becomes fixed and can be determined by the use of the other two. These units are not arbitrarily chosen, but are determined by experimental investigation. Their magnitudes depend upon the fundamental units of length, mass and time, and these having been selected (namely, the centimeter, gram and second), the definitions or specifications of the electric units follow logically, but their concrete expression in actual standards that can be employed in electrical measurements can only be attained after most painstaking researches in what are called absolute measurements. The two of these three units which have been so determined are the ohm and the ampere. As all other electrical units are based upon these, it is of the greatest importance that they be determined with the utmost exactness. At the International Electrical Congress at Chicago, in 1893, they were redefined in accordance with the results of the best determinations made up to that time. The ohm is specified in terms of the resistance of a column of mercury 106.3 cm. long, having a cross section of one square millimeter; the ampere in terms of the quantity of pure silver it will deposit electrolytically per second from a solution; the volt in terms of the electromotive force of the standard Clark cell. An immense amount of work has been done by investigators in various countries of the world in the determination of the values of these units, and the figures adopted in the definitions undoubtedly come very near the truth. Nevertheless, we know from subsequent work that at least two of these units are very slightly in error, and one of the most important problems before the Bureau of Standards is the redetermination of these fundamental units.

The quantity in question is small, so small as to be of no consequence in engineering and commercial work. But scientifically it is important, and as instruments and methods are improved, as they are year by year, any small discrepancies in our fundamental units become of more and more significance. The National Physical Laboratory of England and the Physikalisch-Technische Reichsanstalt of Germany, as well as a few private investigators in this country and abroad, are all working in the same direction. The difficulties to be overcome are so great that only the most elaborate researches carried out under the most favorable circumstances can be expected to bring us appreciably nearer the desired goal. Two researches at the Bureau of Standards during the past year gave results of value preparatory to the redetermination of the ampere in absolute measure. One was by Dr. Wolff showing how to overcome one of the defects of the standard cell; a new method of preparing the mercurous sulphate yielding a crystalline product which gives cells of more uniform electromotive force than formerly. Prof. Carhart of Ann Arbor, who has been engaged upon this subject for some time, arrived independently at the same result even earlier, the results being announced by both men at the same meeting in Washington in April last. The other investigation was by Dr. Guthe, who, after carefully studying all the various forms of silver voltameters which have been proposed, showed that, although different kinds gave slightly different results, certain ones, when properly handled, gave practically identical results, and hence could be depended upon for measuring current to a very high order of accuracy. Dr. Wolff is continuing his work on standard cells, and Dr. Guthe is now engaged on the absolute measurement of current, by means of a new electrodynamometer.

I have been engaged, with the assistance of Mr. Grover, Mr. Durston and several other members of the Bureau, in the absolute measurements of electric capacity and inductance, and in the investigation of electrical measuring instruments, more especially for the precise measurement of alternating currents, voltage and energy. These investigations have involved the construction of much new apparatus, as well as the thorough study of some well-known instruments. One of the practical problems in connection with the accurate measurement of capacity or inductance is the determination of the frequency of the interrupter or of the alter-

nating current employed. This usually amounts to obtaining the speed of some kind of motor, often an electric motor. For some kinds of work, to be within one per cent. is considered sufficiently accurate. For other cases one-tenth of one per cent. is none too good. In still others one-hundredth of one per cent. is deemed necessary. In this work we sought to get the frequency to a thousandth part of one per cent. This required a very perfect control of the speed, and yet by attention to all the sources of disturbance, and by the use of a very sensitive indicator, the desired result was obtained and an important additional step taken in absolute measurements.

Many other interesting and important questions are being investigated, and work enough for years is already before us. These particular examples of the work at the Bureau have been cited, not because I presume that you are especially interested in the problems themselves, but rather to illustrate the kind of research work we are doing.

The work of testing is being carried on simultaneously. Resistance standards, current standards, standard cells, Wheatstone bridges, potentiometers, magnetic instruments, current instruments, voltmeters, wattmeters, condensers, inductances, and many other electrical instruments have come to us from manufacturers, universities, technical laboratories and departments of the national government. To be able to get reliable standards and to have instruments calibrated at a nominal cost is a boon to all careful experimentalists. Heretofore it has often happened that the burden of the work in a given investigation has been to calibrate the instruments employed, and often the facilities at command were insufficient to yield results of high accuracy. Within the last three years (that is, since the Bureau has been testing instruments), there has been a marked improvement in the quality of some kinds of electrical instruments made in this country. It is now so easy to determine whether a resistance box guaranteed by the maker to be correct to 1-50 of one per cent. fulfills the guarantee, that the maker is compelled to use correct standards and to adjust his resistances carefully in accordance with the same.

Probably the most interesting collection at the St. Louis Exposition from the standpoint of physical science was the magnificent exhibit of scientific instruments made in Germany. There was a

time not so very long ago when France and England surpassed Germany in the production of scientific instruments. But Germany, by the giant strides which it has made in the last twenty years, has left other countries in the rear, and this wonderful progress has been largely due to the wise encouragement and assistance offered to instrument-makers by the German government. This assistance has taken various forms, but the principal factor has probably been the work of the Reichsanstalt and the Normal Aichungs Kommission, the two government laboratories doing the work which the Bureau of Standards aims to do in the United States. They have set a high standard for scientific instruments and have not only shown how defects could be corrected, but have developed the theory and the design of many new instruments. All this has occurred so recently that it is not generally known in the United States, and German instruments are not as largely used as they deserve to be. We hope that the next few years may witness a similar impetus in the production of scientific instruments in this country, and that the United States may come to hold the same enviable position, with respect to scientific instruments in general, that she now does with respect to tools and labor-saving machinery, and to certain special classes of scientific instruments.

The advantage of having instruments and standards of high accuracy for engineering and research work is obvious and needs no proof. I wish, however, to point out the advantage of using such instruments as far as practicable for purposes of instruction, especially in the more advanced laboratory courses. If the apparatus is not accurately adjusted, the careful student, and perhaps his instructor as well, are prone to lose valuable time in trying to locate errors that are inherent in the apparatus, or in striving for a degree of accuracy which is unattainable with the instruments employed. On the other hand, when the apparatus is known not to be correct, it is so easy to attribute to the instruments any discrepancies in the results that careless reading and hasty work may possibly be encouraged. It is a great delight to the real lover of quantitative experimental work, of whom a great many are to be found in almost any college class, to do a piece of work with precision instruments and obtain an accurate result, duly checked by proper variations of the experiment. The educational value of such work is certainly greater than when only roughly done; the pleasure derived is incomparably greater. It

is by no means necessary that all the instruments of a laboratory be sent away to be tested. If only the laboratory possesses correct standards and suitable comparing apparatus, the calibration or adjustment of most of the other instruments furnishes excellent experimental work for the students and assistants of the laboratory.

Another important section of the work of the Bureau is photometry. This is really optical rather than electrical, but owing to the fact that the chief work is with electric lamps and a very considerable electrical equipment is required, it is grouped with the electrical work in our organization. The standards employed in photometric testing are less satisfactory than in most other branches of physical measurements. The quantity of light emitted by a given source is usually expressed in candle power; the ordinary incandescent electric lamp, being approximately equivalent to sixteen standard candles, is called a 16 candle power lamp. The candle as a standard of measure has passed out of vogue, but light is still expressed in candle power. Various sources of light have been proposed as standard, the Hefner lamp, burning amylacetate, being most used as a primary standard. As working standards specially prepared, incandescent lamps are generally used, and are quite satisfactory. Greater progress has been made in recent years in developing photometers and the auxiliary apparatus for comparing lamps than in perfecting a primary standard of illumination. Although the initial equipment of the Bureau for this work is not yet complete, we have already done considerable testing, especially in rating lamps purchased to be used as standards by manufacturers and others, and in testing lamps purchased by the various departments of the Government. Millions of incandescent lamps are sold each year on carefully drawn specifications, and it is a matter of considerable importance to know whether the conditions of the contracts are met by the manufacturers.

In addition to the exhibit made by the Bureau of Standards in the Government building at the St. Louis Exposition, an electrical laboratory was equipped and maintained in the Electricity building. This was done at the request of the Exposition management, the object being two-fold; first to exhibit a working electrical laboratory and, second, to do electrical testing for the Jury of Awards, for the Railway Test Commission, and other

electrical interests at the Fair. The laboratory building, which was within the Palace of Electricity, and extended along one of its walls for a distance of about 175 feet, was divided into six rooms. Notwithstanding the fact that it was a temporary structure, the laboratory possessed many of the appointments of a permanent installation; and, although many disadvantages and limitations were experienced in doing scientific work amid such surroundings, we succeeded in doing a good deal of satisfactory work, including both research and testing. So complete a laboratory has never been installed in any previous World's Fair, and it proved to be of considerable interest both to visitors and to those electrical interests which availed themselves of its facilities for testing instruments. A refrigerating machine, installed adjacent to the laboratory as an exhibit, furnished refrigeration for experimental purposes and also for controlling the temperature and reducing the humidity of the atmosphere within the laboratory. This proved not only a great convenience in doing experimental work, but also a comfort to the workers, and the cool office of the Bureau was a favorite retreat for the Electrical Jury in the hottest days of the jury period.

The third division of the work of the Bureau is the Chemical division, in charge of Professor W. A. Noyes. The development of this work has waited on the completion of our laboratory buildings. The installation of the equipment of the chemical laboratory is, however, now in progress, and chemical work will be well under way before the end of the present fiscal year. The work in chemistry will consist, first, in coöperating in certain lines of physical research and, second, in serving the chemical interests of the country. This will be done partly by research and partly by testing.

The Bureau has already done considerable testing of apparatus used in volumetric analysis. The American Chemical Society, through its committee, has been coöperating with the Bureau in fixing the limits of tolerance for such apparatus and in defining the specifications to be followed by the manufacturers. Another committee of the American Chemical Society has proposed a plan whereby standards of purity of chemical reagents shall be set, after careful investigation of the subject, and specific labels selected to indicate definite degrees of purity of such reagents. The Bureau of Standards, according to this plan, is to coöperate

with the Society in securing conformity to these standards on the part of manufacturers. I will not undertake to give details of the proposition; the work is of great importance and promises to bring the Bureau of Standards into close connection with the manufacturing and analytical chemists of the country. Another subject in which the Bureau has been invited to coöperate with the American Chemical Society is in the matter of securing uniformity in technical analyses. Too great discrepancies are found in the results obtained by different public and other chemists when analyzing proportions of the same sample. This is largely due to the different methods of analysis. It is proposed to investigate thoroughly the various methods employed, and to select certain of the best reagents, in order that the results found by different analyses may be more concordant and more accurate. Other lines of research and testing are contemplated, and will be undertaken as the facilities permit.

The field of chemistry, as well as physics, has so expanded in recent years that the two now overlap over large areas. Indeed, it is often impossible to say that a given problem belongs to one or the other, the fact being that it pertains to both fields. Hence, the physicist frequently comes to the point where he needs the resources of a chemical laboratory to carry him through a problem supposed to be purely physical, and conversely the chemist, not only in electro-chemistry and physical chemistry, but in analytical chemistry as well, requires very many of the facilities of a well equipped physical laboratory. Hence we have so planned our laboratories that all the facilities of the entire equipment may be brought into service on any problem, whether it originates on the physical side or on the chemical. This, we believe, will prove of great advantage to the work of the Bureau.

There are three chemists in the chemical division at present, and the number will be increased as the work develops.

It is the aim of the Bureau not only to conduct investigations through its members, but also to afford facilities for research by others who may come as scientific guests. It often happens that a proposed investigation requires apparatus or other facilities not at the command of the person proposing the investigation, and no university can perhaps offer him the necessary facilities and assistance. The Bureau of Standards hopes to encourage investigation by providing such facilities and assistance, but can

do so only to a limited degree until the laboratory space is increased by additional buildings. There are scores and perhaps hundreds of ambitious physicists, young and old, engaged in teaching in the colleges and technical schools of the country who are deterred from doing valuable research work by lack of facilities and assistance. It is believed that a generous policy of assistance through the Bureau of Standards will be greatly appreciated by such workers, and that the output of original research from America will be materially increased thereby. A summer's work under favorable circumstances might yield as much as a full year's effort under adverse conditions, and a year, enough to amply repay the sacrifice it might involve. But, as I have already said, the full realization of this plan lies in the future. For the present all our laboratory space is required to meet our own pressing needs, although we do have just now one scientific guest with us, about to begin some interesting investigations.

I have tried to show briefly some of the work which the Bureau of Standards is doing and is preparing to do, to fulfill its functions as the American National Physical Laboratory, using the word physical in a liberal sense as its work includes both chemistry and engineering. The national government is doing a large amount of scientific work through the various Bureaus and Departments. That money expended in this direction is well invested, the Department of Agriculture, the Coast and Geodetic Survey, the Geological Survey, and other Bureaus, have already abundantly proved. Their function and ours is to contribute something to the advancement of human knowledge and to serve the public. We hope not only to be of service to scientific and technical laboratories in the various ways I have tried to explain, but also to serve in many ways the larger general public.

It is a peculiar pleasure to me to be present to-day at the opening of the John Bell Scott Physical Laboratory. It is a beautiful building, a fit representative of the splendid science to which it is dedicated; a notable addition to the equipment of Wesleyan, testifying eloquently to the generosity and loyalty of the donors; a worthy memorial to the unselfish life of the noble young man after whom it is named. The good it will do in the future years is immeasurable.

ADDRESS

By H. C. M. Ingraham, LL.D.

ON the 29th day of June, 1903, the corner-stone of this Memorial was laid with joyous hope, but with some anxiety, for then it was not known just what would be the result of the work which was to follow. To-day, however, as we gather to dedicate this laboratory, a completed building, its commanding beauty recognized by all who behold it, and its ample and appropriate appointments approved by those who are best able to judge of its adaptation to its intended use, the anxiety of 1903 has been swallowed up in satisfaction and gratitude.

It is not necessary to recount all that has contributed to the successful completion of this work: the talent, the genius, the efficiency and good taste of Mr. Charles A. Rich, the architect; the faithfulness and competency of Mr. William Mylchreest, the contractor; the sleepless solicitude of Professor Crawford and his associate, Professor Cady; the helpful counsel of Professor Rosa; the watchfulness of Dr. Raymond, both in his relation to the work as one of the Building Committee and as President of the University; the deep interest with which Mr. Samuel T. Camp, while living, watched over the development of this structure, ever manifesting that loving solicitude which a mother has for her growing boy; and the open-handed liberality of Mr. Charles Scott and his son, Charles, in providing the wherewithal necessary for its accomplishment.

Fifty years ago the college developed the physician and the lawyer, the teacher and the preacher, and through them chiefly made its influence felt by the people. To-day it is still exerting an important and wide influence upon the masses of men through these learned professions. This, doubtless, is yet its most important work.

But the scope of college influence has broadened and vastly increased within recent years. It was fifty years ago that Emer-

son said that "The college is not so wise as the mechanic's shop"; but that cannot be said with so much of truth to-day as when it was uttered. At present, college professors are not only working in the earlier fields of study, the humanities, but they are working also in new fields, the natural sciences and economics. Now the college graduate is on the farm, in the marts of trade, in the laboratories and the machine shops, as well as in courts and pulpits. He is constructing bridges and railroads, and working wherever the great industries of the nations are being prosecuted with newly conquered and sublime forces.

He has been hunting out the rubbish heaps—the debris, which, for ages, has been cast to the void—and has extracted therefrom dyes which rival the Tyrian purple, perfumes as fragrant as the rose, medicines more potent and healing than any which were ever known before. He has at last discovered the long sought secret of transmuting these baser things into gold.

The college has thus reached the masses of mankind as never before.

Cadmus, in an age of war, sowed the fields with dragon's teeth, and a harvest of armed men came forth. The college graduate in these days of peace and plenty sows his fields with bacteria and, lo, they are burdened with the harvests of food for beasts and man!

In earlier times the college graduate was often a prophet. He climbed the mountains and brought down, like Moses, divine messages; and this he does still. But with him now goes his college classmate, who fastens a wire to a mountain torrent and brings down the wire to some city; and workmen in the machine shops stand aside and see this power of the mountain, in some wonderful way, doing their former work, while they move up to higher things; and see the streets which were as dark by night as the deep pathways of the cataract, now as light as the day.

All industrial pursuits are being transformed by the aid of the college, and the manual laborer is being elevated to work requiring more of skill, and is receiving therefor more wages for fewer hours of service.

Whatever there is of ethical and intellectual and moral stimulus acquired by the student in college is now being felt and imparted in some degree to the wage-earners through these new associations. Their privileges and comforts of life have been multiplied, health increased, and life prolonged.

To-day it is from the schools that the mechanics' shops are getting their wisdom.

The mysteries and riches of nature seem inexhaustible. Two hundred years ago Pope wrote that brilliant but poetic epitaph for Sir Isaac Newton:—

> "Nature and nature's laws lay hid in night:
> God said, 'Let Newton be,' and all was light."

But this was not quite true. Newton's theory of light is too corpuscular for these times, and in the last two hundred years the starlike eyes of science have peered through darkness, and realms of nature, and nature's laws, which Newton never revealed, have been brought to light. Newton would not have claimed so much for himself as did the poet. He thought that he had but gathered a few pebbles upon the ocean's shore.

The provisions now made by colleges to enlarge their influence and reach the masses of the people have called for vastly larger properties than was required for the work of earlier times, and students, unaided, cannot equip and sustain such institutions. Tuition fees will not even support them after they are founded. The masses of the people, those whom we call common people, cannot of themselves build up and sustain colleges. They must be established and sustained by the State or by the gifts of others—by men who love their fellow men and want the future to surpass the present. He that "hath this world's goods and beholdeth his brother in need" *can* do it. It is his supreme privilege to do it; and if he does not do it, either voluntarily or through the State, it cannot be done at all. Many men in the midst of their life's work have recognized this growing need of the people and have done much towards meeting it.

This has been true in regard to our own college more than once, and recently Mr. Charles Scott, Sr., and Mr. Charles Scott, Jr., have caused this building to come into being.

The people must, sooner or later, know that these gifts to colleges must work for their benefit, and it is but natural that they should respond with gratitude to their benefactors. Indeed, it may be hoped that these generous gifts by those who have, for the good of those who have not, will tend to ameliorate the blind and disastrous struggle that exists in these times between the workman and his employer—the poor and the rich.

This building, which we now dedicate, is to be a perpetual memorial to a noble young man, one who sacrificed his life in sympathy and coöperation with the most unselfish, altruistic and beneficent war that a great nation ever waged. But it is more than a memorial. It is a valuable addition to the usefulness of this University, and it will be a help to the people, far and wide, as to their creature comforts.

And now this building, which Mr. Scott, Sr., never saw, has become not only a memorial of his deceased son, but a monument to himself. In the dead of night, before the light of morning had ushered in our last Thanksgiving Day, Mr. Scott heard the call to come up higher and join the company of father and mother, wife and son, and other dear ones, *and his ascended Lord,* and experience his first day of thanksgiving in that city whose builder and maker is God.

The ancients had an adage on this wise, "Nothing but good of the dead." This rule is no restraint upon us in speaking of Mr. Scott.

Seventy-six years ago he was born in the north of Ireland, and his surname harks back to Scotch ancestors. In 1830 his parents moved to Philadelphia, and from that time till his death he was a resident of that goodly city. His father was never a man of property and he died when his son was very young, and Mr. Charles Scott early felt the pressure of necessity. His eighteenth year was big with destiny for him. In that year he began his business career as an office boy in the firm of William P. Wilstack & Co., then the largest wholesale establishment of its kind in the United States. When he was twenty-two years of age he became a partner in that firm, and thereafter continued as such partner till the death of Mr. Wilstack, in 1872. This was the Mr. Wilstack who established the Art Gallery of Philadelphia, with the gift of over $3,000,000.

After his partner's death, Mr. Scott organized the firm of Scott & Day, which continued as the successor of the old firm till 1876. Following this, Mr. Scott entered upon the manufacture of certain patented car springs, and when the business became very large he had it incorporated. It is said that corporations have no souls; but he was the soul of this corporation till 1902, when he parted with his interest therein and retired from business. Certainly fifty-seven continuous years of business activity entitled him to rest.

In that eighteenth year he also became a member of the Methodist Episcopal Church. Both his parents had been Methodists, and all his children are now Methodists. On entering the church he went to work at once in the Sunday School, and from that year till the last year of his life his time and prayers and money went forth in ever increasing and earnest efforts for the temporal and spiritual welfare of the church. All its institutions were dear to him and partook liberally of his bounty. The list of the institutions which he thus aided would be too long to rehearse on this occasion. The cause of the wornout preacher especially appealed to him, and on one occasion he contributed $15,000 for its advancement.

But dearer to him than all other of the many institutions which he served, as I am informed, was Wesleyan University, and his last large gift was to this institution.

For twenty-four continuous years he served this college as one of its trustees and with his gifts.

Few men knew the leaders of Methodism so well as Mr. Scott, and the place where they saw him most frequently and at his best was in his own home. That home was ideal, and with all its charms and comforts was ever open to them.

This man whom so many of the learned were constantly taking counsel from, was a graduate from the school of necessity. He was an apt scholar in that school and passed up into prosperity. He knew what it was to be employed and to employ, to serve and to be served, what it was to want and to abound. "Sweet are the uses of adversity," but sweeter still have been to many the uses of his prosperity.

Charles Dana was wont to stop and remove his hat from off his head in the presence of some grand old elms near his home. When I see a man standing for years head and shoulders above most of his fellows, in business capacity and integrity, in good citizenship, in loyalty and helpfulness to his church, in interest in his fellow men and the institutions that work for their uplift, and in devotion to his wife and children and friends, making his home the abode of love and sympathy and hope and contentment, I recognize him as one of God's noblemen, and I revere him.

He has gone, but the good that was his has not perished or departed from the earth; it has descended. In the lives and characters of his children, who are with us on this occasion, all the

strong and admirable and helpful qualities of character which made him what he was are manifest in full force and virtue.

There is a legend, that on the eve of the day fixed by Mellitus, first Bishop of London, for the consecration of the Church of St. Peter, which we call Westminster Abbey, St. Peter himself came down to earth and proceeded to that church. The building stood out clear, without darkness or shadow. A host of angels descended and re-ascended, with sweet odors and flaming candles, assisting, and the church was dedicated with the usual solemnities. Edric, a fisherman, who was fishing that night upon the Thames, was the only one who beheld the vision. When Bishop Mellitus arrived the next morning with anointing oil and the articles for the great dedication, he found infallible signs of St. Peter's visit and that he himself had dedicated his own church.

"If aught of things that here befall
Touch a spirit among things divine,"

who can tell whether our departed benefactor, he who was most instrumental in erecting this Memorial, but who had never while on earth beheld it, has not, with disembodied freedom, visited these consecrated grounds and, like St. Peter, who dedicated that wonderous Memorial Abbey at Westminster to its sacred uses, anticipated this dedication with his own presence and benediction.

And now, President Raymond, with a thankful heart and deep reverence, on behalf of Mr. Charles Scott, who has ceased from his labors, but whose works do follow, and of Mr. Charles Scott, Jr., who is happily in the midst of his labors, but who preferred that another should perform this function, I deliver to you, as President of Wesleyan University, the keys of this noble gift and commit to you the care of this University building.

ADDRESS

By President Bradford P. Raymond, LL.D.

I ACCEPT this building for the Board of Trustees, and join with them in this expression of appreciation of that generosity and good will which prompted the erection of this Memorial in this place. Wesleyan is almost too young to have done much in the way of memorials. We have been so absorbed in providing for the exigencies of the present and the demands of the immediate future, that the meaning of the past has been crowded out, has hardly gotten itself above the threshold of consciousness. But an institution, like an individual, never becomes fully aware of itself nor of the meaning of its life until its past begins to haunt it with sacred memories like a real presence. It was from this hidden life that the Memorial Chapel came. From this hill went forth the young, the generous, the brave, into the conflict for the life of the nation in 1861-65. And the names of those that did not return are engraven in that south window, deep red with the blood of their sacrifice. As you stand alone in its presence, when it is flooded with the glory of the morning sun, you may easily see the flame that burns, but does not consume, easily hear the voice that spake of old, saying: "Draw not nigh hither: put off thy shoes from off thy feet, for the place whereon thou standest is holy ground." It was a national sentiment that prompted the building of that Memorial, but that sentiment was perfectly consonant with the spirit of our faith, and the memorial of sacrifice and of war grew easily into a temple of worship and peace. And to those of us whose memory runs back a single decade, the chapel takes on added sanctity because of the tablet which commemorates four decades of service by Professor James C. Van Benschoten. Our catalogue shows the names of thirteen men in whose honor various chairs have been named, some of them by generous donors who have desired to perpetuate the names of their friends, and some of them upon the initiative of the Board of Trustees in honor of these benefactors.

In view of these facts, one begins to feel the presence of the past, haunting him like the strains of an old melody. We have a history. It stretches on toward a century. If, in the rush of the present, one pauses to reflect, and if one listens until the confusion and clatter of the noisy day is hushed, one may hear the solemn music of deep devotion that runs through the long day's work like a diapason; may feel the generous impulse that has stirred the hearts of our benefactors; may see the forms of the heroes moving about this campus, grown to giant proportions in the long perspective of the years.

We are becoming aware of our past,— a past that is worthy in its ideals, rich in achievement, and prolific in every decade of the unheralded heroic. We come to dedicate another Memorial to-day. It will be known through the centuries as the John Bell Scott Memorial Laboratory of Physical Science. John Bell Scott graduated with the Class of 1881. The Class numbered thirty-one. Twenty-eight of this number that went out in 1881 are living, and three are among the immortals. Mr. Scott, with the generous enthusiasm characteristic of him, offered his services to the government in the Spanish war and was appointed Chaplain by President McKinley. He returned home after a few months' service, stricken with typhoid fever, and on the sixteenth of July, 1898, passed on into the unseen. The building which we are about to dedicate is an expression of the interest of the family in Wesleyan, and of their wish to perpetuate the memory of this brother and son, on these grounds. I am sure, if he can know of this day, that his soul is aquiver with an added joy and real gratitude, for to no place, other than his home, did his thought turn more frequently, or with more filial regard than to this. Wesleyan was surely an Alma Mater to him.

It is the gift of the father, Mr. Charles Scott, and of the brother, Mr. Charles Scott, Jr. We dare not question the Providence of God, but had God willed it, and could we have had present to-day the father, our personal friend and Wesleyan's generous benefactor, it would have turned this occasion into a kind of sacrament. But, although our service is not a sacrament, to the eye of faith the building is and always will be symbolic. The stones in the walls are living stones. It was the custom among the patriarchs of old to mark those places where God had signally manifested himself, with some monument and memorial. When

Jacob, on his way to Padan Aram, lay down to sleep and saw, in the dreams of the night, the angels of God ascending and descending there, and felt anew the thrill of the old Abrahamic promise: "In thee and in thy seed shall all the families of the earth be blessed," he rose early in the morning, and took the stone he had for his pillow and set it up for a pillar, and poured oil upon the top of it and he called the name of that place Bethel.

We are here to pour oil upon this pillar, to make this stately pile, which the genius of the architect has made so beautiful, and the fidelity of the contractors and workmen so substantial, a veritable house of God.

The successive generations of students will here see the angels of God ascending and descending upon this glorified world. For are not light and electricity also messengers of His good will to men?

It stands as the symbol of the revelation of God in a young life that was devoted to Christian service, a symbol of the faith and goodwill of those who raise this pillar and perpetuate in it the memory of that life. To these high purposes of science and of faith we are now to dedicate this building.

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THE NEW NORTH COLLEGE

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NEW NORTH COLLEGE
(From a water-color sketch)

The New North College

The laying of the corner-stone of the new dormitory took place at 2 P. M. on Monday, March 25, 1907. Rev. Henry Baker, D.D., '64, pastor of the First Methodist Episcopal Church of Middletown, offered prayer. President Bradford P. Raymond made the following remarks:

ADDRESS

By President Bradford P. Raymond, LL.D.

A few months ago we stood about this place to watch a smoking altar, and as we watched, it seemed not only that the ancient tabernacle of a living spirit were in the crematory, but also that the spirit itself with its ancient memories and hopes, its joys and sorrows, were being reduced to ashes and that the fitting sentence were "ashes to ashes, dust to dust." That experience is often made so vivid in our experiences and is so universal that we cannot but feel that it has a rational place in the economy of things. We could not but think then of what the old building had been, of the life it had sheltered, the hopes it had housed, and the songs which, like an old friend, it had heard sung. We stand to-day upon a new platform. Then the cruel winds of a February night which was sinking into a March morning chilled us like a drenched garment. But the springtime is with us to-day. The snow has gone. The blue-jay and the robins are among the trees. The shouting hosannas of Palm Sunday are just behind us and the triumphant diapasons of Easter are already in the air.

This old corner-stone connects us with the past. Upon it rested the walls of old North College. It did duty there like an Atlas for 80 years. It was the custodian of the documents which the fathers saw fit to send down to us, and which now go into the archives of the University, and it is made to-day the custodian of the docu-

ments which we commit to its keeping, to be read when, and by whom? The old corner-stone is now a new corner-stone. It has been redressed in the modest and becoming fashion of a new time. Many changes have come over this nation since it began duty here and set its bluff shoulders under the old superstructure. But though the changes are many and life is ten-fold more complex than then, we go out from it along the old structural lines. We only vary from the lines of the old foundation to bring the new structure into more perfect alignment with Judd Hall, the library, the chapel and South College. And this is the meaning of the new life, viz.: a better alignment with the varied, complex and tumultuous activities of this hour. Science keeps us hard up against reality, and especially against that form of reality which presents itself in the form of sequence, and under the concept of mechanism. And with the spirit of research that has long characterized our laboratories, we have kept our scientific work growthful and vital. But there is much new territory to conquer, and we must assuredly continue on the old lines.

The library is an index of all our intellectual activities, and reflects our intellectual interests. Its alcoves show that we have not broken with the past. It is that continuity that steadies all our experimentation and adventures in the present. It must be preserved. But the thoughts of men are far more active to-day than formerly with the things of the present, and with the outlook to the future, and far less dominated by tradition. And the library will show this new dominance. It is a kind of graphophonic device to make audible and potent the thought of every school and of every conspicuous man. A new library building and a quarter of a million of endowment are in the future for us, but the future is always becoming the present.

The college chapel was made a war memorial. There are times when the man in charge of a Gatling gun and the man with a New Testament in his hand may fittingly touch elbows in the ranks. The college exists for all nations, but for all nations chiefly by what it can do for this nation. The organization of college men in the interest of civic and political righteousness has already been effected. The nation demands the service of men that will not take bribes, of men of clear heads, pure hearts and strong arms, for service in all the peaceful activities of economic, municipal and political life. And this kind of service, if it is to

be incorruptible and enduring, must spring from religon. That spire, that chapel bell, that desk and organ, the crimson window, the faces that look down upon you all proclaim, as does every stone in the wall, the supremacy of Jesus Christ, his lordship over this and every nation. May the time never come when it shall be fitting to build another memorial of war. We must, however, build forever in the old lines, for the kingship of Jesus Christ, through the brotherhood of man, with all the far-reaching implications of revolution that that sovereign sway may carry with it.

South College looks toward a larger and more efficient administrative activity.

This new dormitory is to be the home of those in whose lives the new and larger ideals are to be realized. Successive generations will come and go here. The foundations are already laid, and they are deep and strong. The walls will soon be up, and they will be lofty and imposing. You may already see the windows aglow with the lights that illuminate and glorify the old campus. And as you watch the play of the shadows and hear the night winds among the elms, you feel the work of a magic hope that stirs the blood like old wine. And if the college build on the old lines, perpetually adapting them to the ever increasing complexity of life's conditions, we shall send our delegates to that world-conference of which Tennyson sings:

> "Till the war-drum throbbed no longer, and the battle-flags were furled
> In the Parliament of man, the Federation of the world."

A list of articles placed in the corner-stone was read by W. J. James, '83. Then the stone, which was the original corner-stone used in the construction of North College, was laid by Cephas B. Rogers, Esq., of Meriden, Conn., a trustee of the University. The program was concluded by the undergraduates singing, "Come Raise the Song for Wesleiana."

The new dormitory will be of Portland brown-stone, practically fire-proof, 152 by 48½ feet in dimensions, four stories in height above a basement, and will cost about $125,000. The building will contain one hundred and one rooms, arranged to satisfy varying demands. There will be twenty-four rooms, each for one student; and ten single rooms, twenty-three suites of two rooms, and seven suites of three rooms, each for two students. There will be lavatories in the basement and on the third floor, supplied

with tub and shower baths. The floor construction is to be of reinforced concrete throughout, and the stairs of iron and slate. The building will be heated by steam from the central heating plant, and all rooms will be lighted by electricity. All partitions in the basement, corridors and stair-wells are to be of hollow terra-cotta brick. The architects are Albro and Lindeberg of New York City. A reproduction of a water color drawing of the building faces page 213.

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